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Notes of a Pioneer in Aviation Medicine

By

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WHEN aviation was young, it was generally believed, even within the medical profession, that the only basic requirements for a pilot, in addition to good health and normal eyesight, were an innate flare for the dramatic and a superabundance of courage. If a man could see where he was going and not get dizzy from heights, he was physically qualified to fly. And if he could walk away from his landing, once he managed to get the machine back on the ground, he was a professional "aviator."

These conclusions appeared to prove themselves among the relative handful of men, and the intrepid young lady or two, who flew the primitive, pre-war machines in the first decade of powered flight. It was all too obvious that what casualties there were resulted from a too sudden contact with the earth.

When we went to war with Germany, in 1917, hundreds of youngsters rushed to enlist in the fledgling flying corps. The physical examination given was practically identical to the standard Army formula. The only exceptional qualifications made for those applying for flight duty were not physical requirements, but were educational, based upon an assumption that the mastery of a heavier-than-air craft must require a high order of intelligence.

It was a fortunate happenstance that such educational requirements also produced relatively high physical characteristics. Once a man demonstrated his ability to master a few simple mechanical principles (often accomplished in less than a dozen hours of flight instruction), he was officially turned out as an "aviator" and went confidently off to combat.

Even with such excellent physical material, however, once large numbers of men were flying, things began to happen which were not readily related either to the recorded physical condition of the pilot or the demands upon his mechanical knowledge. Many of those, who in every measurable way seemed perfectly "normal," developed fear neuroses. Others suffered from nervous fatigue. So common was one type of reaction that it was called "aviator's belly." In some cases, hours after they had been back on the ground, some pilots broke into fits of hysteria.

Our doctors, who themselves had had no flight experience, did the best they could, but there was no yardstick available to measure any individual's adaptability to flying. It was generally concluded, therefore, that only continued exposure to the stresses of flight itself could accurately segregate the unfit.

It was to cope with this disconcerting problem that the aviation section of the U. S. Signal Corps was created. By the end of World War I, a greatly advanced although still elementary, set of specifications had been developed for judging the physical and mental requirements in the selection of flight

personnel. But after the signing of the Armistice in 1918, and the unfortunate disbanding of our miiltary aviation, most members of the medical profession who, by trial and error, had sought to establish the basic principles of what was beginning to be called "aviation medicine," had neither the means nor the opportunity to carry on their important work.

The pre-war transition from military to commercial flying was made with the best tools available at the time, surplus military aircraft and the pilots who had logged many hours flying them. But, just as in military flying, our experience in flying the mails at night produced a set of alarming symptoms of physical failures, even in pilots who had survived combat experience. A high mortality over a period of time left only those pilots who not only were skillful enough to cope with flight problems of increasing complexity, but who could establish and maintain sufficient emotional stability to withstand new types of occupational stress.

By the middle 30's, an encouraging demand from the general public, as well as from business and industry, for the speed and convenience of air travel and shipping, and the development by the manufacturers of relatively efficient multi-engined aircraft, enabled the airlines to approach the character of an "industry."

However, there was no possibility of accomplishing this with a constantly dwindling supply of qualified pilots. And, in our efforts to provide dependable air transportation for the traveling public, there was no room for trial and error experiments in developing commercial flight personnel.

Thus, once we attempted to expand commercial flying in the United States, we were again brought face to face with the still unanswered question of whether the human mechanism could be adapted to keep pace with the rapidly developing flying machine.

The veteran pilots, who had successfully come through the hard school of experience, could be depended upon to form the nucleus for an expanded flight corps—not only through their ability to contribute to flight safety, but by giving to younger men the benefit of their wealth of experience. Flying with young co-pilots on the larger planes the industry was then producing, they would be able to evaluate, by observation, pilots who themselves would never have or never could have their years of seasoning by trial and error. But, there were simply not enough of these veterans available.

In an effort to prolong the useful life of our experienced pilots, and to make the selection of new personnel less subject to error, a loyal but understandably skeptical Board of Directors approved my proposal to establish an Eastern Air Lines' Medical Department, on July 1, 1936. At that time, no other airline in the world had such a department solely devoted to the study of medical problems in relation to flight operations.

To head up our experiment, I reached back into the list of my wartime associates for Doctor Ralph N. Greene who was connected with the U. S. air base at Issoudun, France, where I served as Engineering Officer before joining the 94th Hat-in-the-Ring Squadron at the Front. Dr. Greene, who had the dubious distinction of being the first medical officer to be ordered to fly, became Eastern's, and the world's first Airline Medical Director. Night after night we sat up, reviewing problems and matching suggested solutions with the bright future we could see ahead for air transportation.

Safety is the basic characteristic of the airline business. To insure the highest standards of safety in our mechanical equipment, I had, long before, established a policy of "preventive maintenance" for everything that went into the airplane.

This system calls for constant surveillance of the aircraft, and hour-by-hour and day-by-day record of the performance of engines, propellers and airframes, all keyed to the detection of symptoms of mechanical failures so that their causes could be corrected or eliminated before they could develop.

To Doctor Greene, I expounded my lay-

man's notion that, through proper medical surveillance, we might be able, with relative effectiveness, to apply the same principles of preventive maintenance to the men who would fly the machines.

Dr. Greene adopted the concept wholeheartedly. The expense of equipping a laboratory was frightening but, by sacrificing the price of a new airplane, we obtained laboratory equipment comparable to that found in higher type hospitals and clinics, and started drafting a program.

Initially, we were concerned only with the pilots. By that time, of course, standard requirements had been established by the Government for the licensing of pilots, and periodic physical examinations were mandatory for maintaining this in force. Our program was not undertaken with any thought of duplicating or checking work already done by the Government's authorized medical examiners—we were concerned with a different and much more difficult problem.

By 1936, most of our senior pilots had devoted 10 to 15 of their adult years to flying and many of them had no other working experience. Their continued gainful employment depended upon a good physical condition, and, over all, hung the depressing fear that, once they reached 45 years of age, they would be too old to fly.

In most cases, contact of the Government's doctors with the pilots was limited to the short periods of the physical examinations which were given semi-annually. Also, of necessity, these doctors were functioning in the triple capacity of judge, jury, and executioner as far as pilots' licenses and renewals were concerned. It was only human that pilots, who had discovered their own physical defects, adopted an attitude of secrecy in self defense.

Thus, while the Government's examiners arrived at sound conclusions concerning obvious conditions of health, their infrequent contacts prevented the development of the friendly confidence that might have persuaded pilots, voluntarily, to reveal symptoms of insipient, potentially disqualifying ailments which, through proper treatment and direction, could be corrected and the professional life of the pilot substantially prolonged.

Our belief was that this condition could be corrected only by having a medical director of our own, who would be able to assume a role of "family" doctor for all of our pilots, to be sought out by them as a sympathetic counselor in all matters affecting their health.

At the same time, by seeing our pilots frequently, by flying with them, by visiting them in a social rather than in a medical capacity, he could not only appraise them psychologically, but could—and did in a number of cases—observe symptoms of approaching ill health in time to take or recommend preventive measures.

It is understandable that, initially, there was some reluctance on the part of our older pilots to submit to the further physical checks which we proposed. As they became convinced that the Company was going to this unprecedented effort and expense primarily for the pilot's own good, helpful cooperation was forthcoming.

The first, and obvious, step in our medical program was a thorough physiological and psychiatric examination of each pilot and pilot candidate. These records provided documentary assurance that our pilots who were already flying the line, as well as those qualified for airline pilot training, were capable of satisfactory sustained piloting performance, the safety of which would not be jeopardized by any discernible defect in mind or body.

Our findings were detailed on a chart so that every item could be compared in each successive examining period. These records proved to be extremely useful, because they enabled us to isolate, for research, symptoms of potential stress which, if not corrected, could result in possible harmful deterioration of the individual's physical fitness.

From these "discoveries," through research conducted either in our own laboratory or in cooperation with medical offices of

the military services, state universities and other interested organizations, we produced what are recorded as the initial "answers" on the effects of altitude, fatigue, and diet, on the health of the professional pilot, as well as either the elimination or substantial reduction of such troublesome matters as impairment of hearing, the discomfort of static in radio ear-phones, eye strain from the type of illumination then used to light instrument panels, and many other subjects.

The results of our initial efforts were encouraging, and that all might benefit from what we learned, we distributed and widely-publicized reports of the first year's operation of our medical department. It was most gratifying that, within a relatively short time, practically every major airline established a medical department of its own and, when the CAB and the CAA came into being, a medical office was established in that agency through which could be correlated and evaluated the clinical records which were being collected by the various airlines.

It is also interesting to note that these efforts of the commercial industry were closely correlated with the medical departments of the military services, particularly the Air Corps.

Our own medical department also assisted others, not only in the establishment of their own medical program, but undertook special research, notable among which was the assignment from Pan American World Airways, which led to a now widely accepted system for the control and prevention of certain tropical ailments which flight personnel operating beyond our international borders were beginning to contract in serious proportions.

We are proud also that many of the standards then set and solutions discovered, have since found practically universal application for the protection of both flight personnel and passengers in world-wide air commerce.

Our system of maintaining a "constant record" of each individual, which enables our medical staff to see what is happening to the individual, and note any change while it is still well in the normal range, has produced particularly worthwhile benefits. We have over the years, for instance, detected four lung cancers in the early stages and through prompt and proper surgical treatment these individuals enjoy good health and are productive today.

Some men who are threatening diabetics have been under successful treatment for several years. We have detected numerous hernias in the early stages. We have been able to correct early eye defects before fatigue takes place, and many hearing defects have been corrected.

Similarly, we have detected a number of potential hypertensives, and so far have been successful in protecting them. In three cases we have picked up acute heart coronaries, all of which have satisfactorily responded to treatment, one for more than eight years. Our medical department is, in reality, a "Maintenance Base" for our pilots and other flight personnel and is recognized by them as such.

From the pilots, our medical program was eventually expanded, first to ground personnel intimately associated with the safe conduct of flight operations, for which specific physical requirements were established, and which have now become practically standard for the airline industry.

One of the most important of our programs, for instance, has to do with cold prevention, which consists of injections for virus and similar sorts of infections, and the use of oral cold vaccine tablets for the bacterial type of infection, which we feel is about 70% effective on respiratory infections. We supplement this with advice to enable the individual to avoid exposure and the proper conduct of his physical affairs to ward off upper respiratory infections.

In addition to periodic check-ups of management personnel, we also make annual eye checks for vision, depth perception, and color awareness, audiometric hearing checks, and similar studies. For our ground personnel involved in flight operations similar checks are made periodically. For the em-

ployee on the job we maintain, at our Miami base, a first aid office not only for the treatment of the injured, but equally, for the correction of the cause of accidents, in order that they may be eliminated wherever possible. We also maintain a health and welfare nurse who, through her acceptance in the homes of employees, has done much in personnel relationship as well as medicinal areas.

The question of the anatomical ability of man to match the constantly advancing environment which our scientific studies are creating for us is still debated. The complexity of this problem has led to the recognition of aviation medicine as a specialty unto itself. But, in my opinion, there is no question but what medical science will prove as capable in preparing us for the coming air age of supersonic flight as it has in the first 50 years of our struggle to conquer the relatively nearby atmosphere for our welfare and advancement.

The tremendous progress made through the medical departments of our military services, particularly the School of Aviation Medicine at the Aerospace Medical Center, Brooks Air Force Base, Texas, and the Navy's School of Aviation, located at Pensacola, Florida, and the cooperating interest of our great medical institutions across the United States with which we, in our own efforts, are gratified to be associated, will in time find the answers to the problems confronting mankind in our rapidly approaching projection into outer space.

For, today, there is no longer any doubt that the medical profession, concerned with the physiological aspects of flight, is universally recognized as one of the most primary of our aeronautical sciences.

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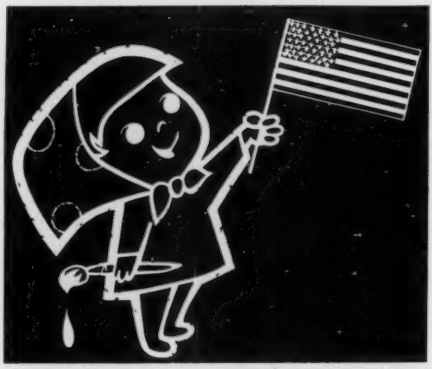
ARMED FORCES DAY—MAY 21, 1960



POWER FOR PEACE

Low Back Pain and Its Management at the Dispensary Level

By

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LOW back pain as a medical problem is well known to both military and civilian practitioners. Its principal military significance lies in the number of people involved. The medical management of patients with this complaint is important not only because of the numbers involved, but also because correct early management may eliminate much hospitalization and may be the deciding factor in whether a patient returns to duty, or is lost to the service, possibly involving compensation.

Yater's[1] "Symptom Diagnosis" lists fifty conditions in which low back pain may be a presenting symptom. But in his words, "The difficult cases are those of chronic lumbar pain without other outstanding symptoms of a serious nature."

Low back pain is not a disease, but a decompensation resulting from a discrepancy between load imposed and reserve available —somatic or emotional. Occurrence below the age of 20 suggests severe maladjustment or severe congenital or developmental defects. Occurrence after menopause or adrenopause suggests osteoporosis or occasionally multiple myeloma. Back pain has its peak in the twentieth year and declines through the vigorous years of life.

Today, in our medical practice, tuberculosis, metastasis of cancer, and rheumatoid arthritis are rare in comparison to psychosomatic back pain. Since extensive search for such conditions may impose damaging iatrogenic factors, it should not be done without adequate indication.

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Cobey[2] commented on the problem of low back pain during World War II. He said that military statistics suggested postural disorders of the lumbar spine as comprising about 60% of all low back cases. He stated that in basic training centers, many hospitals required one-half of the orthopedic beds for the treatment of low back pain and that two-thirds of the physical therapy time had to be allotted to these patients. In an analysis of 1154 cases from an Army general and regional hospital, he found the following distribution of etiology. (Table 1) Near the end of World War II, Fox[3] wrote on the treatment of soldiers complaining of back pain. He noted that the quality of the patient's desire for recovery was a more important factor in return to effective duty than any organic changes which could be demonstrated by roentgenographic examination. He suggested a combined orthopedic, psychiatric and physical therapy treatment program for low back pain.

J. Vernon Luck[8] wrote on psychosomatic problems in military orthopedic surgery. He showed that multiple areas of the body may demonstrate hypesthesia or a functional weakness or partial paralysis, all based on psychological problems as the sole cause or most important cause of disability. In the 100 cases he reported 20 per cent of them had low back pain.

Civilian industries have sometimes tried to screen applicants for heavy labor on the basis of low back x-rays. A recent report of such a study has been made by Henry et al.[4] in a recent periodical wherein they outlined criteria for good, fair, and poor risk backs based on roentgenologic findings. Their criteria were arrived at after examining 6,010 low back x-rays in the past 14 years. In contrast to this belief that low back stability

TABLE 1

ETIOLOGIC DISTRIBUTION OF BACK PAIN

60%	Poor posture
10%	Spondylolisthesis
5%	Sclerotic changes in lumbosacral facets
5%	Signs and symptoms of herniated nucleus pulposus
10%	No orthopedic condition was found and these were considered functional in origin

or freedom from disease can be diagnosed by x-ray, two other articles in the same issue of the Journal showed little correlation between abnormal x-rays and low back pain. Jacobson[5] et al. in an article, *The Swayback Syndrome,* reported the following x-ray findings in forty cases of swayback (Table 2).

Fisher[6] et al. made a comparative x-ray study at Brun's General Hospital of x-ray findings with and without low back pain. During World War II they compared x-ray findings on 200 consecutive cases of low back pain and on 100 normal soldiers of comparable age who had no back pain. Of 12 variations from normal found in both groups the percentage of each variation was comparable in both groups (Table 3).

Dodge and Cleve[7] analyzed the findings in 122 cases of low back pain at Tokyo Army Hospital in 1950 and 1951. Most of these were patients evacuated from Korea. They found 47 or 39 per cent with objective evidence of disease and 66 or 54 per cent with no significant objective evidence of disease. Seven per cent of their cases were not classified in either group.

TABLE 2

CORRELATION OF SYMPTOMS WITH DEGREE OF SWAYBACK

	Degree of Swayback	Asymptomatic	Symptomatic
Mild	12	5	7
Moderate	11	7	4
Severe	17	8	9
	40	20	20

TABLE 3

PERCENTAGE OF X-RAY VARIATIONS OF THE LOWER BACK IN A CONTROL GROUP AND CASES OF LOW BACK PAIN

	Percent Control Group—100 Cases	Percent Symptomatic Group—200 Cases
1. No x-ray abnormality	20	20
2. Spina bifida occulta	36	39
3. Transitional L-S vertebra	11	10.5
4. Asymmetrical facets	39	25.5
5. Narrowing of L-S joint	11	17
6. Degenerative arthritis L-S joint	4	7
7. Degenerative arthritis S-I joint (sclerotic)	1	2
8. Rheumatoid arthritis S-I joint	0	1.5
9. Increased acuity L-S angle	2	5.5
10. Spondylolysis	1	5.5
11. Spondylolisthesis	5	9
12. Un-united Epiphyseal centers	2	2.5
13. Generalized osteoporosis	1	0

The above references indicate a wide range of opinion and considerable confusion regarding the correlation between anatomical variations, x-ray findings and symptoms. The existence of this confusion suggests the need to re-examine the practical approach to the problem of the patient with low back pain. It is our contention that the practical approach to this problem involves the handling of these cases at the dispensary level and avoiding hospitalization whenever it is not positively indicated.

That low back pain continues to be a significant military problem is shown by recent figures from five Army general hospitals of only those patients with low back pain that were referred to the Physical Medicine Service in the years 1956 and 1957 (Table 4). Also shown in Table 4 are the number of cases of low back pain seen by the Orthopedic Clinic at the U. S. Army Hospital, Fort Ord, a station hospital smaller than any of the above general hospitals.

TABLE 4

LOW BACK PAIN CASES IN MILITARY HOSPITALS

Patients Referred to Physical Medicine	1956		1957	
	Military	Non-Military	Military	Non-Military
William Beaumont Army Hospital	155	87	249	122
Brooke Army Hospital	167	77	276	128
Fitzsimons Army Hospital	262	102	(Total for 1956 and 1957)	
Madigan Army Hospital	177	57	—	—
Letterman Army Hospital	154	100	102	59
Total Patients Seen in Orthopedic Clinic (Fort Ord Station Hospital)	722	93	515	91

SUGGESTIONS FOR THE EARLY MANAGEMENT OF PATIENTS WITH LOW BACK PAIN

Screening. Above all, determine who requires hospitalization and who does not. For example, back pain with sciatic radiation requires hospitalization without further question.

Back pain without sciatic radiation may require hospitalization but only when the presence of positive physical findings indicates inflammatory joint involvement. Such involvement is determined by static and dynamic postural examination:

a. Stance—A back twisted out of straight alignment, listing forward and to one side requires hospitalization.

b. Gait—An individual swinging one arm freely when walking, holding the other rigidly to his side may be considered for hospitalization.

c. Mobility of Spine—A patient bending over forward readily but unable to reach the ground with his fingers while his knees remain extended may be considered either predisposed to back pain or affected by previous attacks. A patient bending over forward freely to a point, and then deviating his spine involuntarily to one side has evidence of acute joint inflammation and requires treatment.

The following behavior patterns suggest psychogenic overlay:

a. The patient who hesitates or delays in performing free motion within a range of mobility apparently free of limitation.

b. The patient who throws not only muscles connected with the low back into spasm but also his shoulder and arm muscles.

c. The patient whose hand when bending forward sneaks to his buttock even after being requested to omit that gesture; who appears to be compulsively acting on the degree of suffering.

d. The patient who makes you, the physician, anxious is probably conveying his own anxiety to you rather than pain.

Thus, two simple questions, whether the pain is in the back alone or whether it goes down the leg; and two simple investigations, gait and forward bending can determine whether we deal with a simple back pain or one complicated by neurological radiation or by psychogenic overlay.

Final Screening—Don'ts in the Examination. Remember that whoever consults a doctor is driven by anxiety in general, but not necessarily by concern about the symptoms he presents. Indeed, the more dramatically he presents his symptoms, the more desperately he may, usually obliquely, demand reassurance. Therefore, avoid the following mistakes which reinforce his apprehension.

1. *Trauma:* Stay away from discussion of trauma. A patient who fractures a vertebra can become asymptomatic after a few days of bedrest and exercise; why then should your particular subject present a complaint years after a minor trauma which had neither x-ray evidence, discoloration by hematoma, or abrasion of skin to substantiate it?

2. *Failure of Previous Treatment:* Do not submit to hours of prepared statements such as "And I hurt my back after I came into the Army and when I went to sick call they said it was nothing. When I hurt it again they gave me the diathermy, then I had that fall and they took me to the hospital for three weeks and they did nothing."

Each minute you submit to this sales talk makes the patient worse and harder to help. Interrupt him and ask about job, family, and everyday adjustment. These areas may reveal his patterns of failure. The majority will realize the time basis for their complaints and may give them up without even requiring the conscious raising of an eyebrow on your part.

X-Ray Evaluation—Need for Same. If the Orthopedic Surgeon is requested to justify the use of x-ray in examination of backaches without a history of trauma, he will be in an awkward position to furnish convincing evidence. He may say:

a. That medical-legal considerations prompt him to conform with the common practice in his community—but then it is just that practice which is the prime sociological factor in production of the prevalent importance of back pain.

b. X-ray evidence may support the clinical impression of post menopausal or adrenopausal osteoporosis. But in this area, x-ray evidence is notoriously subjective and equivocal and not necessarily correlated with symptomatology.

c. Perhaps the only valid reason is the early recognition of congenital variations to avoid attaching unwarranted significance to one of these at a later date.

Back Pain as a Psychosomatic Illness. Two general points can be made regarding any psychosomatic illness.

1. One rarely sees the reported classical cases of hysterical blindness or paralysis. Today, the symptom with which one must deal is pain in most any portion of the body. This changing form of emotional symptom may be the result of changes in the level of sophistication on the part of our society. Our society recognizes the ease with which hysterical blindness or paralysis is diagnosed and handled. Therefore, this form of symptom does not serve its intended purpose and a new symptom—*pain*—becomes the universally accepted method of expressing emotional conflicts.

2. Some clarification is needed on the question of organ susceptibility or specific emotional conflict. There are two schools of thought on this subject—one of which says that a specific organ in an individual is susceptible and responds to stress regardless of the type of stress. There is an opposite viewpoint which holds that specific types of conflict always affect certain organs. A middle course is probably the more correct one. The assumption that all ulcers, for example, are the result of a constant hunger for love, or that back pain is always due to hostility, can be misleading. Although these formulations frequently are correct, the assumption in any one individual may not be correct and can be misleading. Handling any case with a preconceived idea on the part of the doctor about the specific conflicts involved leads to all sorts of difficulties.

Back pain, duodenal ulcers, neurodermatitis, and any of the usually seen psychosomatic disorders are due to emotional stress which varies from individual to individual and in the same individual from time to time.

Life's experiences involving human relations may be productive of such emotional attitudes as fear, resentment, frustration, or guilt; accompanied by anxiety or hostility which may cause disturbances of physiological function in literally any part of the body. Certainly in some cases there is organ specificity, especially in the presence of a mildly damaged or injured portion of the body. What better focus of attention and susceptibility can we have than, for example, a *back* with mild hypertrophic changes, the result of old trauma.

In the management of the functional back pain the following points should be made:

1. After a brief history and physical ex-

amination as previously outlined, if it is felt that this patient's back pain is functional, in the majority of patients it is sufficient to simply reassure them that you do not feel that any serious illness is present. Frequently this is all that is necessary.

2. If it is believed a back pain is functional it is important to act as if you believe it. It does relatively little good to tell a patient that his back pain is functional and then order additional or special x-ray studies.

3. The effective practices of medicine requires utilization of positive suggestion. Anything which puts any doubt in the patient's mind will interfere with his recovery. Following the positive approach requires avoidance of repeated trials at therapy such as physical therapy, bed rest, and traction.

4. If you believe a back pain is functional, giving a patient additional *trials* at therapy only puts doubt in the patient's mind about what is really wrong with his back.

5. Use of the positive approach also should eliminate prescription of large quantities and varieties of medication. If we believe a symptom is functional in origin the obvious approach is an attempt to remove the cause rather than the effect.

Handling the Emotional Element. Avoidance of the above mentioned pitfalls still may not deal with the psychosomatic illness and the following points should be made.

1. In the majority of psychosomatic illnesses, to those who complain of pain, the *pain* is *real*. Nothing is accomplished by arguing with the patient as to whether he should or should not have pain. Accept the fact that when a patient complains of pain in his back that he does feel that pain. Calling it imaginary or saying it is "just in your head" will only make the patient angry and make him doubt your ability as a physician, thus lessening the effectiveness of any constructive attempts made in the future.

2. The question may arise, "should emotional factors be looked into and explained to the patient at the time of his first visit?" We believe that this is usually unnecessary. Simple reassurance is indicated and should result in relief of symptoms in a high percentage of cases of back pain presented at the dispensary level. This is true because the patient comes with not only pain in his back but also with anxiety over the possible presence of serious illness, such as a disc problem, a fracture, or something that is as frightening to the layman as cancer.

3. If these measures fail, then it is time to explore with the patient the possible emotional factors, and how these emotional factors may be causing his symptoms.

Physical Medicine Considerations. Certain physical therapy procedures have been found useful in relieving symptoms of muscle strain, spasm of muscle and symptoms from obvious soft tissue trauma.

Use of physical measures as "a trial of therapy" in cases of doubtful disease is mentioned only to be condemned.

If a patient without a diagnosis is actually in pain, bedrest and medication should provide relief pending a diagnosis by further investigation. Use of physical therapy adds an unwarranted and unnecessary iatrogenic factor.

However, when low back pain is caused by derangement of joint structures, by trauma, or irritation of the ligaments, fascia, muscles, synovia or periosteum an immediate reaction occurs with contraction and splinting of the muscles of the area.

Muscular splinting immobilizes the back, increases tension of the intervertebral discs and joints, interferes with circulation, increases the metabolism of the muscles of the back and causes fatigue and accumulations of metabolites in these continually active muscles. Each of these responses in itself produces pain in the muscles and joints of the back.

Until this splinting or reflex guarding reaction can be relieved, it is not possible to assess the degree of initial injury. Treatment aimed initially at support of the injured part and relief of the secondary effects of muscular splinting is of considerable benefit for back pain which may have many causes.

The muscular splinting occurring after trauma to the back serves the purpose of immobilizing the injured part until healing can occur by the formation of a firm scar. The scar should just replace the defect in the injured tissue. If the injured parts are approximated too closely, the scar is too short so that limitation of motion occurs. Scar tissue is usually less flexible and less tough than normally developed connective tissue. When scar tissue limits motion of the back it is subject to frequent stress and is likely to be torn again. The desired goal then in healing a back injury is the restoration of continuity of damaged connective tissue to provide stability but not to restrict motion to the extent that the scar is subject to re-injury.

Kottke[9] has listed five aspects of treatment:

1. Adequate protection of injured area to prevent further injury.
2. Analgesia for relief of pain.
3. Promotion of healing.
4. Interruption of the cycle of secondary muscular splinting.
5. Maintenance or re-establishment of normal mobility.

Protection of the injured area in a severe injury may be obtained with rest in a firm bed and traction.

Less severe injuries may be protected with adhesive tape strapping or a lumbosacral belt.

Physical measures which will relieve pains due to muscle spasm are application of moderate heating to the injured area and gentle massage. Ice cold packs have at times proved more effective than heat and should routinely be used in place of heat during the first 24 hours after an injury.

Restoration of normal mobility should begin as soon as the acute pain can be relieved and pain free motion can be achieved. Once fibrous contractures have developed, it is difficult and often impossible to work them out by any subsequent exercises. To maintain mobility the muscles of the back and hips should be stretched to their full resting length once or twice daily. Stretching exercises should be vigorous for all muscles except those in the injured area.

Muscles most frequently splinted during back pain, and which should be stretched, are the erector spinae, and the extensors, flexors and abductors of the hips. Stretching exercises should be prescribed to meet the needs of each patient.

Summary

Low back pain which has always been considered a significant problem in war time continues to be a military medical problem during our present period of military preparedness. Careful consideration and early care and management of patients with low back pain is necessary to avoid compensation casualties and psychological cripples. Some guiding principles have been presented, useful in selecting low back pain patients for hospitalization and in handling the ambulatory patient once he is separated from the rest.

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Iliopsoatic Syndrome: Development of Anomalies in Man*

By

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THE White House Conference on Child Welfare and Protection has defined the mechanics of the body as "the mechanical correlation of the various systems of the body with special reference to the skeletal, muscular and visceral systems and their neurological association. Normal body mechanics may be said to obtain when the mechanical correlation is most favorable to the function of these systems." This would imply that good body mechanics have overcome the deficiency created by abnormal iliopsoatic tension and the ability of the body through physiological efficiency to recover.

The etiology of iliopsoatic syndromes in the development of anomalies in man is presented here, in the light of the writer's belief that an understanding of it is essential to the recognition and treatment of lesions which, while actually having their beginnings in early childhood may not exhibit their effects until skeletal maturity has been attained. Frequently the end products or sequelae of the syndromes are not recognized until the individual has reached military age. Developmental dislocations of the hip in the pre- and sub-luxation stages, and often in the dislocation stage; latent results of osteochondrosis of the femoral capital epiphysis; and slipped capital epiphysis, especially those cases that have gone through a mild stage; all may first manifest themselves during introductory exposure to strenuous basic training.

In later military life (30-40) degenerative disease of the hip often is the end product of a condition which had its inception in early childhood and has been precipitated during the years of service. Torsion fractures of the femoral neck are not uncommon, particularly during periods of active duty. Fractures of the lesser trochanter and the transverse processes occur during sports and combat activities.

According to Goff,[3] osteochondrosis deformans juvenilis dorsi was considered to be 18% of the U. S. Army sample. Iliopsoatic (idiopathic) scoliosis must be viewed in the light of a thorough understanding of its development, particularly during the stages of decompensation and continued development during the adult years.

The etiological factor in the development of degenerative disease of the spine is of great import, first from the viewpoint of prophylaxis and secondly as to treatment of such pathologies, commencing with the cervical spine, where traction must be directed with the neck in the direction of the primary foetal curve; and for the lumbar area, where the direction must be the same. The line of the body must be in the foetal position for the cervical and the lumbosacral area. An appreciation of the iliopsoatic syndromes will make apparent the merits of pelvic traction with posterior tilt of the pelvis, Williams exercises and Williams bracing.

Differential diagnoses of lesions of the ileocecum and appendix, the kidney and ureter; the psoatic gait, the formation of tibial torsion; and knock-knees and bowleggedness; are better understood when one is cognizant of the development of iliopsoatic syndromes.

When a man assumes the unique posture of lumbar lordosis a necessary adaptive elongation of the Iliopsoas must take place. The posture is not possible unless adequate elongation of the Iliopsoas musculature is achieved. When an attempt is made towards assumption of the erect posture and there is coincidental failure of the necessary adaptive elongation of the iliopsoatic musculature, there is brought into play a powerful intrin-

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TABLE 1
ILIOPSOATIC SYNDROMES

Hip External Rotation Force	*Spine Traction and Rotation Force*
1. Transient Synovitis of Hip	1. Schmorl's Nodes
2. Dislocation of Hip	2. Scoliosis
a. Developmental	a. Iliopsoatic (Idiopathic)
1) Presubluxation	b. Neuropathic
2) Subluxation	1) Paralytic
3) Dislocation	2) Cerebrospastic
b. Neurotrophic	c. Sciatic
1) Paralytic	3. Spondylolysis and/or Spondylolisthesis
2) Cerebrospastic	4. Osteochondrosis Deformans Juvenilis Dorsi
c. Traumatic	5. Isolated Fracture Transverse Process (Lumbar)
3. Osteochondrosis Femoral Capital Epiphysis	6. Degenerative Disease of Spine
4. Slipped Femoral Capital Epiphysis	a. Intervertebral Disc
5. Torsion Fracture Femoral Neck	7. Miscellaneous
6. Avulsion Fracture Lesser Trochanter	a. Intestinal
7. Degenerative Disease of Hip	b. Urological
	c. Obstetrical and Gynecological
	d. Gait
	e. Deformities of the Lower Members

sic force, with possible expression in mathematical terms of 300/600# per square inch. A force of this magnitude is created by virtue of the site of the muscle's attachments off the transverse processes of the lateral vertebral bodies, intervertebral cartilages and the ilium, and by its direction inferiorly and anteriorly over the brim of the pelvis to its place of insertion on the lesser trochanter, which is situated posterior to the line of gravity.

Normal expression of iliopsoatic function would be formation and development of the Calcar Femorale, anteversion of the neck of the femur and postural lumbar lordosis and pelvic tilt. Abnormal function of the Iliopsoas would be illustrated in the iliopsoatic tension signs, as follows:

1. The patient is placed in a supine position near the end of the examination table. The unaffected thigh is pressed against the abdomen; the affected member is maintained in a position of neutral rotation and pressure is exerted against the distal thigh. In the arc established with the hip joint as the fulcrum, with the horizontal of the table as O°, the degree of elevation of the affected thigh will determine the extent of iliopsoatic tension.

2. The patient is placed in a seated position off the edge of the table, the distal thigh is pressed firmly against the table, and internal rotation of the hip joint is attempted. If the Iliopsoas is in a state of contracture or failure of lengthening, then the buttock on the same side is found to elevate from the table.

3. Essentially the same mechanism as "2" when the patient is placed in the prone position, the knee flexed. When internal rotation of the hip is carried out, again elevation of the buttock on the same side will determine the extent of tension of the Iliopsoas.

Considering the hip we have:

1. *Transient Synovitis.* This usually occurs before the age of puberty. The etiology is considered on the basis of spasm and contracture with an inflammatory myositis of the Iliopsoas; or secondary joint manifestations following a state of contracture of the Iliopsoas.

The findings are a psoatic gait and a limp; the re-enforced iliopsoatic tension signs are positive. In 25 per cent of cases temperature elevation to 102° is found.

2. *Developmental Hip Dislocation.* Ninety-eight per cent of dislocations of the hip are in the typical, anthropological class. The writer does not believe that there is a dislocation or dysplasia gene.

In a consideration of the three stages of developmental hip dislocation, the classical case commences with pre-subluxation, progresses into subluxation and on to complete dislocation; but the cycle may be entered at any point, so that complete dislocation may be accomplished even though the hip has not gone through the first two stages. Subsequent findings of dysplasia of the head of the femur and acetabulum are secondary to absence of the head from the acetabulum.

The pre-subluxation stage begins with the position of hyper-flexion external rotation of the lower extremity, enhancing relaxation of the capsule and ligamentous structures and the groundwork is set. Failure of axial rotation enhances continuance of relaxation of the capsule.

An obstetrical break can occur during delivery, when rapid internal (axial) rotation is coupled with extension of the member. This maneuver brings about engagement of the intrinsic iliopsoatic force of external rotation, and with the presence of a relaxed capsule dislocation is imminent.

A pediatric break may take place upon suspension of the infant by the ankles; or upon use of sandbags on the buttocks for rapid straightening of the hips. Other influences are the swaddling by the Italians and the Near East countries, and the papoose board of the American Indians. An example of the pediatric release position is found among the Japanese, where the infant is straddled on the mother's back and abduction without extension is present.

In the *pre-subluxation* stage the findings are essentially those of non-axial rotation, capsular relaxation, apparent shortening, atrophy and development of folds. Iliopsoatic tension signs are positive.

The *subluxation stage* commences with engagement of the iliopsoatic intrinsic force, to the stage of dislocation. Tension pressure necrosis of the cartilaginous portion of the acetabular roof; changes in the femoral head and the acetabulum; clinical findings of apparent shortening and a psoatic gait, and positive iliopsoatic tension signs; all are indicative of failure of adaptive elongation of the Iliopsoas.

The *dislocation* stage is expedited by standing or walking, and the findings are those of absence of the femoral head from the socket, such as shortening, Trendelenberg sign, telescoping, atrophy, non-axial rotation attitude of the limb; positive iliopsoatic tension signs and indications of continuance of the iliopsoatic force and its shifting of position with the lesser trochanter, with subsequent hyper-lordosis and anterior pelvic tilt.

3. *Osteochondrosis of Femoral Capital Epiphysis.* This occurs at age 5 to 12. The etiology is primary avascular necrosis of the medial portion of the metaphyseal zone which spreads by slow progression beneath the growth zone and indirectly interferes with the vascular supply to capital growth epiphysis (Gill).[2] Weight bearing, growth and continued abnormal tension of the Iliopsoas resolve in two components: 1) Disturbance of the blood supply at the epiphyseal plate; and 2) mechanical crushing of the femoral head, necrotic tissue, with deformity of the head and neck of the femur.

4. *Slipped Femoral Capital Epiphysis.* This occurs between the ages of 9 and 16 and is due to failure of sufficient elongation of the Iliopsoas during the rapid growth period and the exciting intrinsic force of external rotation, flexion and adduction stress at the hip joint (epiphysis). The pathology is softening and widening across the femoral epiphysis, with subsequent anteversion of the head, an inescapable response to the iliopsoatic force.

The stages of pre-slippage, slippage and dislocation are essentially the same as in developmental dislocation, with the exception that in the former the disturbed relationship is at the level of the epiphyseal plate and in the latter between the capital epiphysis and the acetabulum.

5. *Torsion Fractures of the Femoral Neck.* These are considered to be due to the snap-of-the-whip action of the Iliopsoas upon the weight-bearing extremity following external rotation, abduction, hyper-extension injury.

The findings are in the position of non-axial rotation of the affected member.

6. *Avulsion Fracture of the Lesser Trochanter.* This is usually found in the adolescent, where the apophysis is separated following sports injury. Later in life, avulsion fracture of the lesser trochanter is due to iliopsoatic action incidental to external rotation, hyper-extension and abduction injury. Again, clinical findings are non-axial rotation attitude of the affected member.

7. *Degenerative Arthritis of the Hip.* The primary etiological factor here is the existence of the intrinsic abnormal force of external rotation, flexion, adduction and cephalad projection of the head of the femur, materializing in microtrauma of wear-and-tear at the coxofemoral joint during the weight-bearing phase.

It is to be noted that when this degenerative disease is found secondary to the previously described iliopsoatic syndromes, the same etiological inductor is responsible. Regardless of cause, whether primary or secondary, similar principles prevail throughout, and the end products of degenerative disease are the same: Degeneration of the cartilage, sclerosis of subchondral bone and marginal chondro-osseous proliferation of spurs and osteophytes protecting the joint against movements no longer tolerated.

Considering the spine, we have:

1. *Schmorl's Nodes.* An early expression response of the intrinsic vertical static stress across the vertebral bodies, with herniation of the disc within the body of the vertebra in an attempt to seek release of the continuing power of the vertical tension force of the ill-adapted iliopsoas.

These lesions are the battle scars acquired by individuals in their struggles to attain the erect posture.

2. *Scoliosis.* I believe the classification of Cobb[1] is complete, and cannot be improved upon; but I refer here to a classification of structural types, the iliopsoatic (idiopathic), which constitutes 90 per cent of all cases, and the neuropathic, each of them considered to be within the disturbed iliopsoatic tension etiological scope.

The capacity of the spinal column to reinstate symmetry by voluntary control from all asymmetrical attitudes with punctilio and exactitude lies in the uniqueness of the normal spine (active isotrophy). Due to disparity of active iliopsoatic control, the effect of weight-bearing and growth, the spinal column is given over to abnormal curvatures or deformities. This is an involuntary gradation process or method of recession from the symmetrical attitude. The process is resisted by curbing influences offered by bone, muscle and ligament structure. When there is failure of adequate elongation of the Iliopsoas, internal rotation of the weight-bearing femur simulates the "capstan" principle, applied to the mechanical advantage of the inclined plane (L/H); and it also demonstrates Newton's Third Law.

The spinal rod may be compared to the torsion bar of our modern automobile. The spinal rod is fixed on the pelvis. Rotation is produced by the Iliopsoas at a point on the spine at the level of D/12-L/5, where rotation is limited. The rotatory power is transmitted to the dorsal segments. The upper thoracic region is steadfast in backward movement in the sagittal plane and side bending, but permits frontal and rotatory movement in the transverse plane.

The torsion force transmitted from below is manifested in the dorsal spine by reversal of the torsion force (helical torsion) and formation of a scoliotic vertebral curvature at the dorsal level in the opposite direction, with secondary adaptive changes of the rib cage on the same side as the initiating force, and inflare on the opposite side of the rib cage.

a. *Iliopsoatic Scoliosis* is of three types: Lumbar, thoracic, and lumbar-thoracic curvatures.

In *lumbar* scoliosis the onset, during adolescence, is predicated on iliopsoatic tension, mostly off the bodies and intervertebral cartilages. Clinical features are prominence of the hips, curves small, some drooping of the shoulder and mild rib rotation.

The *thoracic* type is due to helical torsion torque of the iliopsoatic force, which has been transmitted to the thoracic level, and it is classified as to the time of onset. The earlier the age at onset the more severe the curvature at conclusion of growth. The infantile onset presents a rapidly progressing curvature, beyond 90° before adolescence; the juvenile onset, curvature to 65°; and the adolescent onset is productive of the classical scoliotic curvature with marked drooping of the shoulder on the concavity side, posterior rotation of the ribs on the convexity and anterior rotation on the concavity side, iliac crest prominent.

In the combined *lumbar and thoracic* type, the iliopsoatic force produces the left lumbar and helical torsion the right thoracic curve.

Experimental Proof. The author has been able to demonstrate experimentally the formation of iliopsoatic curvatures. Any specific type of curvature of the spine can be demonstrated by X-rays, from the day of birth through the adolescent period, by bringing manual stress into play against the Iliopsoas in those cases where there has been failure of adequate elongation of the muscle.

b. *Sciatic Scoliosis* is usually found at age 30 to 40. The lumbar plexus is formed by the anterior rami of the three and part of the fourth upper lumbar nerves. The lower half of the fourth ramus joins the fifth to form the lumbosacral trunk. The branches of the plexus encounter the Psoas and pass among its posterior fibers.

In the normal spine there is a limited degree of possible rotation of the lumbar vertebrae. Irritative lesions of pressure or tension on the nerve root of the lumbar plexus, or disturbances of the intervertebral foramen, give over to Psoas reflex spasm. Deformity of the spine is lateral and of the inclinatory type, with hip flexion on the same side, and a positive Neri's Sign due to the splinted Psoas.

3. *Spondylolysis and/or Spondylolisthesis.* According to Willis,[5] these are not found in the newborn, occur at age 1 to 7, in 5 to 7 per cent of the population, and usually at the level of the 4th and 5th lumbar vertebrae.

Spondylolysis occurs at some time prior to the third year, with spondylolisthesis appearing between the third and seventh years. Spondylolysis and spondylolisthesis are due to linear de-ossification attributable to overstrain from the upright posture. They may be considered as methods by which man can adapt himself to the erect posture by hyperflexion of the spine. Therefore the nature and extent of findings in the human race depend essentially upon the level of its anthropological progression.

The three stages are 1) prespondylolisthesis, which is increased horizontality of the sacrum, present on assuming the erect posture through an ill-adapted Iliopsoas; 2) the second stage or spondylolysis occurs during the rapid growth period when there is infraction at the pivotal center of the neural arch and the iliopsoatic force re-engages; and 3) spondylolisthesis, which can enter the cycle at any point. The location, type and degree of the dislocation are pre-determined by traction of the tautest of the Psoas origins on the lumbar cecum. The individual must then adapt himself to the flat back.

Spondylolisthesis can occur without spondylolysis, when either the horizontality of the sacrum has been very severe, to permit the dislocation, or spondylolisthesis occurs between the third and sixth years, with fusion or ossification of the pars interarticularis.

4. *Osteochondrosis Deformans Juvenilis Dorsi.* This occurs usually during adolescence, but under the present concept of its formation can be traced back to infancy.

Scheuermann[4] noted that man alone manifests this type of disorder, because of his erect posture. The exciting or initiating factor is the stress phenomenon of the Iliopsoas musculature; the condition is insidious and due to lag in elongation of the Iliopsoas during the spurt of rapid growth.

The anterior tilt of the pelvis and an acutely exaggerated lumbar lordosis, particularly at the lumbosacral level where the anterior disc is increased in size, produce a

compensatory exaggerated dorsal kyphosis. If the imbalance of the lumbar lordosis is in effect over a prolonged period of time there inevitably must be adaptive changes of the dorsal vertebrae in order to maintain the continual compensation that is necessary to keep the stance of the body in its usual relationship to the center of gravity. The indirect immense pressure stress and strain engendered by the Iliopsoas causes vertical compression of the anterior portions of the dorsal vertebral bodies, with maximum stress exerted at the centrum of the dorsal arc. When unrelenting pressure is transmitted to the epiphyseal ring, there is disturbance of endochondral ossification.

There is inhibition of the chondrocytes (aseptic necrosis) due to the compression force. The epiphyseal plate thickens, with impairment of the maturing cartilage; this causes deceleration in the rate of growth, proportional to the distraction of the Iliopsoas and the superincumbent weight of the individual, resulting in irregularity of the final bone and end-plates (Schmorl's Nodes). This is followed (Wolff's Law) by a lag in the anterior longitudinal growth of the vertebrae, with subsequent wedging and a fixed acute curvature.

5. *Isolated Fractures of Transverse Processes (Lumbar).* The etiology here may be direct trauma, such as a blow, or weight falling upon a flexed spine. Many are due to combinations of iliopsoatic action and trauma. They may also be the result of violent contraction of the Iliopsoas, as in heavy lifting or straining.

6. *Degenerative Disease of the Spine, or Osteoarthritis.* This commences with degeneration of the pivotal or axial disc, followed by degeneration of the joint cartilage. Adaptive changes such as exostoses or spurs constitute but one method by which Nature attempts to restrict motion.

Disease based on mechanical or postural factors denotes abnormal distribution of pressure and stresses of the spine. Disturbed alignment of one segment of the spine will place an excessive burden on another segment, with the result that the latter undergoes a more rapid degree of degeneration. Degeneration with osteophytes and collapse of the intervertebral spaces is noted principally at the junction of reversal of the curvatures of the spine, most commonly at the lumbosacral area, then the dorsolumbar and finally the cervicodorsal.

7. *Miscellaneous.* Lesions of the intestinal tract (ileocecum-appendix); urological tract (kidney-ureter), gynecological structures (ovary-uterine tube), obstetrical structures (pregnant uterus-passageway), peripheral vascular tree (common and external iliac arteries, veins, vena cava, aorta), bear some relationship to the course of the iliopsoatic musculature. Inflammatory, irritative or obstructive lesions of these structures are often noted in relation to the Iliopsoas.

A flexion adduction attitude of the hip in acute appendicitis, ureteral stone or tuboovarian disease, to ease the tension of the Iliopsoas, is a relatively common finding. Iliopsoatic tension signs may be of diagnostic determinative value and further investigation in the obstetrical and periphero-vascular fields with reference to abnormal states and an ill-adapted Iliopsoas is suggested.

Studies of the external rotation (psoatic release) and internal rotation (tibial torsion) gaits have been carried out. Failure of axial rotation of the hip during development of the foetus and its relationship to the formation of tibial torsion have been considered. The formation of bowlegs and knock-knees and the subsequent pronation or supination deformities of the feet as release mechanisms, stemming indirectly from initial failure of axial rotation of the hip, has been investigated.

Conclusion

The writer has set forth his theory relative to recognition of Iliopsoatic Syndromes. The primates, Neanderthal man and in fact all races of mankind, in assuming the erect posture have also assumed a vulnerability to the destructive force of the Iliopsoas, a muscle ill adapted to that posture.

The prophylaxis, management and care of

these syndromes can now be based on a rational rather than an empirical regime.

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TRAINING FOR CITIZENSHIP

"Any educational program which makes a man a better soldier also makes him a better and more useful citizen. In addition to the many skills learned through on-the-job training, the Army seeks to give the soldier an understanding of America's place in modern history and the individual's duty as a citizen. Above all, however, the Army is determined to see that military service, is not a period of 'lost time' insofar as educational opportunities are concerned. Many young men whose formal education ceased long before they entered the Army find themselves reawakened and enabled to achieve their full citizenship potential through service programs of general education as well as technical training. This training for citizenship is a very significant part of the Army's contribution to the well-being of the Nation and the success of the great cause of peace and freedom."—SECRETARY OF THE ARMY WILBUR M. BRUCKER, before the National Association of Manufacturers, New York, December 3, 1959.

Progressive Patient Care—A Challenge for Nursing!*

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PROGRESSIVE PATIENT CARE is the organization of facilities, services and staff around the medical and nursing needs of the patients. Its aim is the tailoring of services to the needs of the individual patient whether in the hospital or the home. Five elements of care comprise a PPC program—Intensive Care, Intermediate Care, Self-Care, Long-Term Care, and Home Care.

Much emphasis has been placed upon the application of Progressive Patient Care to general hospitals. The concept, however, is applicable to any organized means of providing health care provided that the emphasis is on individualized care. It is the purpose of this paper to describe the application of the PPC concept and the Public Health Service research program in relation to PPC.

Progressive Patient Care is not a concept. It has been used by the Japanese for centuries and by Albert Schweitzer in equatorial Africa for more than 40 years. The heart of a PPC program is the classification of patients by their medical and nursing needs. The first organized effort in the United States to develop a mechanism for classifying patients was undertaken by the Army in 1951. As the classification system developed, it became applicable to other medical facilities such as military, general, tuberculosis and mental hospitals.[1]

The Division of Hospital and Medical Facilities of the Public Health Service has been studying Progressive Patient Care for two years to determine its effect upon patient care. Two hospitals have been used as study hospitals to carry out a series of intense studies of a variety of problems related to PPC that will be described later.

Let me first describe the five elements of Progressive Patient Care. Not all elements need be incorporated in a given hospital, but the development of the full range of PPC elements is a desirable objective.

First, we have the *Intensive Care Unit.* This unit concentrates critically, or seriously ill patients regardless of diagnosis, sex, or economic status, who require constant nursing observation. Such patients may include major surgical cases following release from the recovery room, multiple injuries or burns, major or threatened hemorrhage, acute coronary occlusion. Pediatric and psychotic patients may also be cared for on this unit.

The nurse staffing pattern will depend on the types of patients being cared for on the intensive care unit. Patients with open heart surgery or neurosurgery may require one nurse per patient per shift. On the other hand, it may be sufficient to have only one professional nurse and one practical nurse or nursing aide per room of approximately six medical and surgical patients.

Admission to this unit is often direct from the emergency room. A physician may phone the unit directly without going through the admitting office.

An important function of the head nurse on this unit, as on other Progressive Patient Care units, is to make a daily classification of each patient to determine his nursing care requirements. The classification is used to help the physician determine the patient's readiness for transfer to another unit. It is essential to establish criteria for admission to this unit.

Each intensive care room (5 to 6 patients)

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is set up as an autonomous unit with supplies, medications, equipment, charting area, and intercom within the room, thus reducing the necessity of the nurse leaving the area. About ten percent of hospital patients may be cared for on this unit.

The second element of Progressive Patient Care is the *Intermediate Care unit.* This unit is designed and staffed to care for moderately ill patients who do not require the constant observation of the intensive care patient. Patients who may best be cared for on this unit are those having uncomplicated surgery, acute infections that are stabilizing, those transferred from the Intensive Care unit; and the terminally ill patient. Most patients will be admitted and discharged from this area.

The *Self-Care unit* is the third element of PPC. This unit provides a homelike area for patients who are physically able to care for themselves and are able to walk to a dining area. A patient may be admitted to this unit for diagnostic study, preparation for surgery, or he may be transferred to this unit from any unit in the hospital. Included among these patients are the partially regulated diabetic who requires dietary management and the post-coronary who must learn, under close supervision, how much activity he can tolerate. Patients can be taught to take their medications and treatments on this unit.

The fourth element of PPC is the *Long-Term Care Unit,* which provides services for the chronically ill, the orthopedic, and those requiring extended physical therapy and rehabilitation. As patients progress on this unit they may become candidates for the Self-Care unit.

The fifth element is an organized *Home Care Program* that provides coordinated medical and related services to selected patients at home. Nursing care may be provided by the hospital nursing service, or may be contracted from a community agency such as the Visiting Nurse Association.

The introduction of a Progressive Patient Care Program involves cooperation of the Board of Trustees, administration, physicians and nurses. It might be helpful to establish a liaison committee with these people represented.

Public Health Service Research Program

The Public Health Service began its research into PPC in 1957. The first year's study included a survey by questionnaire of 7300 hospitals (excluding governmental) to determine how many hospitals had one or more units of Progressive Patient Care in operation and how many were planning for such units. An effort was made to find out if PPC as an approach might prove to be a trend in hospital care. If so, what kind of guide materials should the Public Health Service try to develop. The survey also helped to identify hospitals which warranted a visit by members of the research team.

Of the hospitals surveyed, 5300 returned questionnaires. It was found that approximately 100 general hospitals with actual Progressive Patient Care units were in operation. Seventy-five had Intensive Care units and 25 had Self-Care units. Fourteen had both units in operation. About 400 additional hospitals reported planning some phase of Progressive Patient Care.

Size of hospital was not a significant factor in establishing a PPC program. Hospitals reporting these units ranged from those having under 100 beds to those having more than 600 beds. PPC was most frequently found in the 200-400 bed hospital.

The first application of the Progressive Patient Care concept in general, nongovernmental hospitals originated in the Minneapolis-St. Paul area. St. John's Hospital, in St. Paul, Minnesota, was the first hospital to develop and apply all five elements of PPC. This hospital has now had seven years experience with a PPC program.[2]

Most hospitals have adapted Progressive Patient Care units. The University of Kentucky Medical Center in Lexington is the first hospital to be designed and built as a PPC hospital.

Thirty of the hospitals responding to the questionnaire were selected for follow-up visits to validate the responses on the questionnaire and also to obtain other information about the hospital that could not be obtained by questionnaire.

In July of 1957, the Division of Hospital and Medical Facilities organized a 16-member research team to study the phenomenon of Progressive Patient Care. The team included hospital administrators, physicians, nurses, architects, equipment specialists, a biostatistician, a medical records librarian, a dietician, social scientists, and a cost analyst. The Manchester Memorial Hospital in Manchester, Connecticut was selected for study.[3]

The goals of the research team were fourfold: first, to study the PPC program as it was being carried out at Manchester; second, to define a PPC program and its specific elements; third, to identify the major components of a PPC program that might be subjected to measurement; and fourth, to determine the baselines for medical practices, nursing practices, dietary practices, architectural patterns, and cost patterns one year prior to and after the time the program was started. Articles have already appeared on the results of the first year's study.[4, 5, 6]

The first year's research was empirical and did not involve any basic research. The results of the survey of hospitals, team visits, and the work of the team at Manchester resulted in a tentative guide book, *Elements of Progressive Patient Care.*[7]

Many questions were raised about PPC as a result of the first year's work. These questions formed a matrix of hypotheses which might be studied eventually.

Some significant clues began to evolve about Progressive Patient Care as a result of the study. It was found that if a PPC program was to be effective, patients must be classified by their medical and nursing needs once in 24 hours. After the patient has been classified, a mechanism should be provided to transfer the patient to an area where his needs will be met.

One person needs to be responsible for the coordination of patient care. The professional nurse might be the person who should be responsible for the coordination of this care and act as the intermediary between the physician and the patient.

It was found that without specific criteria to classify patients, these patients would be placed in units where their needs would not be met most effectively. Likewise, the assignment of nurses and the facility, such as an Intensive Care unit, did not guarantee that the patient would receive intensive care. Nurses needed specific preparation in identifying patient needs.

Patients in the Self-Care unit were found to require little or no physical care but large amounts of supportive therapy, such as teaching and rehabilitation. This seemed to indicate that other kinds of professional nursing skills were in demand in this unit and the purpose of this unit would be defeated if it were staffed without professional nurses.

Effects Upon Nursing

When patients are grouped by common medical and nursing needs regardless of diagnosis should all nurses be prepared as generalists? Studies carried out by Lentz and Michaels show that nurses have decided preferences as to where they wish to work.[8]

What happens to the nurse supervisor if patients from different services are grouped into one room?

With the short length of stay, will it be possible for nurses to provide for continuity of patient care? Should the professional nurse take greater responsibility in the coordination of patient care? Should she follow patients as they are transferred?

How can clinical experience for professional student nurses be arranged to take advantage of the grouping of patients by common needs? Would it be more realistic to assign students to Progressive Patient Care units for longer periods of time than the usual three months? Are students being prepared to identify and meet patient needs?

Are they being prepared to help patients on the Self-Care unit which requires preparation in the humanities, communication and rehabilitation skills?

Are present measures such as state board examinations adequate to measure the nurse's ability to meet patient needs?

How can faculties of nursing schools be prepared to make the best use of a Progressive Patient Care program?

These questions rather than being roadblocks for nursing, present challenges which can help nurses return to the patient. It is up to professional nurses to accept these challenges and reevaluate present nursing education and nursing service practices.

Effects Upon Patients

How well do patients accept Progressive Patient Care? Observations and interviews with patients suggest that patient acceptance is good but more definitive studies are required.

A study of patient satisfaction with nursing care was carried out at Manchester and the results compared through norms already established through similar studies in general hospitals without Progressive Patient Care programs.[9,10]

Major dissatisfactions with nursing care, such as lack of explanation of care, not seeing a nurse long enough for her to answer questions, and waiting to have the light answered were either reduced or eliminated.

It was found that nurses could readily identify the physical needs of the patient but were unable to, or had considerable difficulty, in identifying the patient's emotional needs. For this reason, patients who were physically ready to be transferred to another unit were sometimes not emotionally ready. Lack of awareness of the latter may thwart the patient's recovery.

Patients needed instruction in how a Progressive Patient Care program works on each specific unit to benefit most from the program.

The movement of patients from one unit to another proved to be less of a problem than it first appeared. Fewer than five percent of the patients at Manchester actually progressed through Intensive Care, Intermediate Care, and Self-Care. Most patients (75-80 percent) were admitted and discharged from the Intermediate Care units.

Effect on Costs

The problem of costs arose frequently, demonstrating the need to develop a method to determine operational and patient costs for each type of Progressive Patient Care unit.

The true effect of Progressive Patient Care on costs will not be measured until studies are undertaken to measure the *total* effects upon the patient, including the period after hospitalization. A goal of the Self-Care unit is to reduce the amount of residual care of patients who are discharged. As the number of "partial cures" and readmissions to hospitals are reduced, the true effect of Progressive Patient Care can be seen. Comparisons of the costs of a Self-Care unit with a conventional unit cloaks hidden costs that exist. Better utilization of hospital personnel and the potential of improvement in the quality of care override the effect of costs.

Other problems needing further study include maintaining flexibility between units, size of hospital, medical staff acceptance, and the effect upon teaching hospitals.[11]

Three major areas for intensive study to be carried out during the second year (1958) evolved. The first was to develop a cost methodology to determine the specific costs of operating a Progressive Patient Care program; the second was to develop a methodology for estimating the number of beds that hospitals should allocate to specific units, and the areas where flexible zones should be maintained; and third to develop optimal and minimal nurse staffing patterns based on medical and nursing needs of patients for each type of PPC unit.

Developing Nurse Staffing Patterns for Progressive Patient Care Units

The nurse staffing study was carried out in two phases. The first phase utilized an

empirical approach to the development of nurse staffing patterns. From the previous survey it was known that approximately 100 general hospitals throughout the country had one or more types of Progressive Patient Care units in operation.

A questionnaire was developed to determine the current nurse staffing patterns in these hospitals and information about types of policies effecting nursing practice utilized on the various units.

A detailed report of this phase of the study is now being prepared.[12] However, we do have some preliminary findings from this phase of the study which we consider significant.

The survey showed that no one typical nurse staffing pattern could be identified for Intensive Care, Intermediate Care, Self-Care, or the Long-Term Care units. For example, nursing hours provided patients on the Intensive Care unit ranged from 3.4 hours to 10.5 hours of nursing care per patient.

The type of patients cared for on the specific unit influenced the amount of nursing care provided. Thus, a hospital with an Intensive Care unit with all neurosurgical or open-heart surgery patients, might provide 10 or more hours of direct nursing care during a 24-hour period. On the other hand, a hospital with mixed medical and surgical patients (excluding the neurosurgical and open-heart surgical patients) might average approximately 5.6 hours of nursing care.

Most Progressive Patient Care units were mixed medical and surgical. When units were not segregated by services, fewer total nursing hours seemed to be required.

Fewer hours of direct nursing care were provided in the Self-Care unit as compared to other units.

Progressive Patient Care units were defined differently. There were no clear cut definitions for each type of unit. Most significant, there was no practical and effective tool for identifying patients' medical and nursing needs. The lack of specific criteria resulted in confusion as to the placement of patients in the specific units.

Two Progressive Patient Care Concepts

The survey shows that two concepts of PPC are emerging. The *first* concept postulates that the organization of facilities, services, and staff based on the anticipated needs of patients will result in better patient care. There was no consensus about the definitions and elements of Progressive Patient Care. Thus, one hospital might conceive of an Intensive Care unit for only surgical patients, another might see the services of this unit being made available to medical as well as surgical patients. The Self-Care unit was thought to be a "minimal care" unit with diminishing amounts of nursing care being available. Few hospitals agreed upon criteria for admission of patients to PPC units.

There are major limitations to this interpretation of Progressive Patient Care. The organization of facilities, services, and staff is geared to hospital efficiency and the reduction of costs rather than to patient needs. The patient is viewed as an organism requiring physical care of short duration, of the nature that can be provided in an acute general hospital. The patient's progress is based on his physical readiness to be transferred.

Nurse staffing patterns are based on averages arrived at by trial and error methods. Thus, each patient is allotted an average amount of care regardless of his nursing care requirements.

No provision is made for continuity of patient care. Nursing functions are task-oriented—getting the job done—rather than patient-oriented. Little attention is given to the patient's needs after discharge—patient progress is often measured in terms of length of hospital stay, thus many patients are discharged with residual nursing care needs to free a hospital bed, or to provide an increased variety of experiences for physicians. One hospital administrator stated that "the only way I can keep my hospital out of the red is to run 120 percent occupancy."

Four studies in different hospitals showed that nursing services provided for patients remained unchanged on Progressive Patient Care units as compared to conventional type

nursing units. Thus, the patient on the Intensive Care unit may be getting three times as much care as the patient on the Intermediate Care unit, but his care is no different and not necessarily based on his needs. The patient on Self-Care receives one third as much care but not the kind of nursing care to meet his needs.

The *second* concept of Progressive Patient Care—the one supported by the Public Health Service—postulates that the organization of facilities, services, and staff must be based on *known* patient needs which should be evaluated.

This concept presupposes that there is a mechanism for classifying patients on a 24-hour basis. The needs of long-term and short-term patients are given equal attention.

The amount of nursing care required by patients varies depending upon individual needs of the patient. Different nursing care requirements emerge as the patient moves from one unit to the next. For example, a patient in a Self-Care unit may need little or no physical care, but he will have other nursing care requirements such as the need for rehabilitation and teaching directed at increasing his ability to help himself and return to his home and work.

Before the second concept of Progressive Patient Care can become an actuality, a clarification is needed of what we mean by patient needs. We should know the requirements of a system in which facilities, services, and staff must be based on patient needs. Also, there should be a clarification of nursing functions and nursing skills necessary to meet patients' needs. A rethinking will be required by nurses in relation to planning of nursing care, one that is patient-centered rather than task-centered. This then led into the second phase of our research.

The basic research for this phase of the Nurse Staffing Study was carried out at the Washington Hospital Center in Washington, D.C.[18] Before any nurse staffing patterns for Progressive Patient Care units could be developed, several basic questions had to be answered. Examples of these are first, questions about the patient:

What is meant by the patients' medical and nursing needs?

How can these needs be identified? How often do these needs change?

Are they different for medical and surgical patients? What residual nursing care requirements does the patient bring with him? Can a classification of patient needs be developed? What specific criteria can be developed to measure the patient's progress?

Next, there were these questions about the nurse:

What is the function of professional nursing? Is it the nurse's prerogative to make a nursing diagnosis in order to identify patient needs? Should the professional nurse be concerned with the identification of physical as well as nonphysical needs of the patient? Once the patient's needs are identified, is it the prerogative of the professional nurse to develop a coordinated plan of care? What criteria can be identified that the nurse can use to evaluate the patient's progress? Can a practical tool be developed which nurses can use to identify patient's needs, develop a coordinated plan of care, and measure the patient's progress to determine his placement on a unit which best meets his needs?

To attempt to answer these questions, one other nurse and the investigator participated in giving direct patient care. Twenty medical and surgical patients were studied over a six-month period. No more than four patients each, at one time, were observed. A hypothetical nursing care plan was developed for each patient from the time of admission until his discharge. This was completed before the initial contact was made with the patient. An actual nursing care plan was next developed and evaluated every 24 hours to measure the patient's progress.

The study of medical and surgical patients provided a basis upon which patients' needs could be classified into four categories; sustenal (e.g., need for food, oxygen, elimination), remedial (e.g., need for corrective therapy such as surgery), restorative (e.g., need for rehabilitation), and preventive care.

The nurse's function was defined according to the patient's nursing care needs and the level of skills required to meet these needs.

Criterion measures for evaluating the patient's progress are beginning to emerge.

The next step in our research is to further clarify what is meant by patient needs and nursing functions. Additional criteria to measure patient progress will be sought. It is hoped that a practical tool which will be helpful to nurses in identifying and classifying patients' needs might evolve eventually.

Summary

Progressive Patient Care groups together patients with similar medical and nursing needs, and organizes medical, nursing, and related services to meet the needs of each patient group. In its broad concept, it goes beyond the hospital walls, incorporating organized home care and other ambulatory services. It envisions the community general hospital as the focal point for care of patients with a wide range of needs, short-term and long-term, bedfast and ambulatory.

Interest in Progressive Patient Care has been enhanced by the dilemma in which hospitals find themselves because of continuing increases in the extent and complexity of patient care requirements, the scarcity of qualified personnel, and the constantly increasing costs of hospital operation. A critical look at the methods of organizing hospital services and the balance between inpatient, ambulatory, and long-term facility care is needed.

As applied to the community general hospital, the concept envisions five distinct elements: Intensive, Intermediate, Self, and Long-Term Care within the hospital, and organized Home Care which utilizes certain hospital services, although it may or may not be administered by the hospital.

Many questions about the application of the concept remain unanswered. Some are now under study.

For nursing, Progressive Patient Care provides hope that the professional nurse can find her way back to the patient; that the professional student nurse can begin to see in practice nursing care centered around patient needs.

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Present and Future Problems in Venereal Disease Control*

By
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THE civilian venereal disease control program in this country is not perfect. This is a confession. As Mark Twain once said: "Perfection is more sought after than achieved." We, too, are still seeking. Having admitted this, I am now going to feel more comfortable in discussing our mutual problems as I see them.

Then let us begin with the general agreement that venereal disease is transmitted almost exclusively through sexual intercourse; and that every case is related directly to at *least* one other case which is potentially devastating if not lethal.

This may seem superfluous at first; but when you examine venereal disease epidemiology across the country, it looks as if many persons either do not recognize this fact or choose to ignore it.

I do not want to infer that we have not made progress against venereal disease in this country. On the contrary, this progress over the past two decades has been truly monumental.

However, since 1954, we have every reason to fear that venereal disease, and particularly syphilis, once more is on the increase.

Recently, private physicians, clinics, and hospitals have reported increases in both early syphilis and gonorrhea in colored and white, male and female, poor and rich, young and old, urban and rural, and every category in between, all across the country.

Of particular interest to you, I should think, are increases in primary and secondary syphilis averaging 200% over a period of three years in such military and recreational areas as Boston, Chicago, Houston, San Francisco, Los Angeles, and the National Capital.

And, unfortunately, we are seeing shocking increases in the 15-19 year age group. In this group alone, reported infectious venereal disease rose from 45,000 cases in 1957 to 49,500 in 1958.

I am not going into the tremendous costs of VD in this country, except to say that it still kills a minimum of 4,000 persons a year, and that we are still paying 48 million dollars a year for hospitalization of syphilitic psychotics. (Incidentally, do you know that the Veterans Administration has in its hospitals right now, about 4,000 veterans with syphilitic psychoses, which will ultimately cost an estimated *minimum* of 150 million dollars?)

Actually, the *total* cost of *all* the paretics hospitalized in the United States today will amount to a sum greater than the *total* expenditure for venereal disease control by *all* the countries of the world, since the historical infection of the Spanish Navy and the Neapolitan Army in 1494.

Of course, some of your representatives have been quoted as saying that venereal disease is no longer a problem. But your published reports show that the number of cases (including those Carded for Record Only) have almost doubled since 1950. Increased morbidity has been reported both in Continental U. S. and overseas by the Armed Forces.

Your sick days from VD have been reduced drastically, it is true. But at the very minimum you are still losing more than 100 man years per year to venereal diseases.

I am not going to belabor this point further because I know that you are in a much

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more advantageous position than I am to judge the total magnitude of your problem. So, in a sense, I feel that this is begging the question.

The question is: When are the medical forces of the United States—civilian and military; public and private—going to effect the practical eradication of syphilis?

I, for one, am convinced that such a goal could be accomplished in the foreseeable future *if* (and you may judge for yourself if these ifs are unreasonable)—

if every suspect is diagnosed definitively and treated if infected;

if every treated case is interviewed *adequately* by a trained interviewer for contacts and suspects;

and *if* each of these contacts and suspects is brought to diagnosis.

Shortly after the introduction of penicillin therapy for syphilis in the 1940's, venereal disease experts all across the country were predicting the rapid extinction of the *Treponema pallidum.*

They were assuming, of course, that the clinician, his patient, and the public would continue to view the very vestige of syphilis as a smouldering peril and a cause for alarm.

Little did they dream that Americans feeling toward this threat to life, health, and sanity, could be as fickle and transitory as it was toward the jigsaw puzzle and the hula hoop.

But penicillin changed things.

Pain, disfigurement, and death, no longer haunted the promiscuous. To many, syphilis had lost its Sunday punch. The fiddler no longer had to be paid.

Clinic loads melted away. Prosperity was upon us; and, for the first time in years, the infected had money. If they thought they had a "dose," they wanted a shot of penicillin in short order and without ceremony.

Many sought private physicians who, for one thing, were too busy to spend the necessary hours in interviewing and investigation which good epidemiology demands.

Still another significant group sought out certain drugstore employees; friends; friendly medical corpsmen—anybody with a ready shot of penicillin and a relaxed sense of responsibility.

And through it all, people who should have known better thought that within a few scant years penicillin would eradicate venereal disease. Water they had for a million years, and it never eradicated fire!

Nevertheless, under the influence of such overwhelming optimism, VD control funds were diverted to other purposes; and public health personnel went off in pursuit of other ends, so to speak. Simply, VD became the stepchild of public health and medicine in general.

Unfortunately, at the same time, Americans took to the road. Perhaps characteristic of the age was the young west-coast patient who named contacts in six States and seven different countries—Which brings me to my next point.

Sometimes there may seem to be inconsequential, isolated cases of VD. But this simply is not true.

Every case of syphilis or gonorrhea is related *directly* to *at least one* additional case some place; and to treat a single case and ignore its epidemiological aspects is no more ethical than to excise the original site of a metastatic cancer, and let its insidious tendrils continue their spread.

To ignore the organism deep hidden in the body of an unsuspecting contact not only endangers the health of one individual but poses a threat to the whole community.

Now, having touched on this matter of epidemiology, I would like to backtrack for a moment, if I may, to the first of my contingencies for eradication—that every suspect be diagnosed definitively and treated if infected.

It is axiomatic that in the epidemiology of venereal disease, the infected patient is the key; and that patient cooperation is vital; because it is the known patient who must be instrumental in bringing his or her contacts to examination. Therefore, a venereal disease control program, if it is to be effective, must be oriented to gaining the good will, con-

fidence, and cooperation of the patient; rather than rendering a clandestine, moralizing, begrudging, or even punitive service.

I believe that in the field of public health, venereal disease services, especially, are governed by many of the laws which govern business—supply, demand, customer satisfaction, etc. And, given any conceivable choice, the so-called "customer" will go where he can get the maximum satisfying service while preserving the maximum of human dignity.

Suppose a venereal disease self-suspect does come to us. Or suppose we are examining for some other reason. How thorough is our examination anyway?

Certainly it is not sufficient to say that a genital lesion may mean syphilis. In addition, we must carefully consider the possibility of oral or anal lesions or mucous patches, finger lesions, macular or papular lesions, condylomata lata, lymphadenopathy, alopecia, or other more subtle signs, any of which may hint at syphilis. And, of course, there may be syphilis in the absence of lesions, detectable only by serology.

As for gonorrhea, the purulent discharge from the urethra always suggests gonococcal infection. *But,* we must also remember that gonorrheal prostatitis, particularly in its chronic form, may show nothing in a smear. And we must be aware of the possibility of proctitis, too, in greater numbers of persons than many would believe or care to believe.

In the matter of urethral symptoms, I might mention in passing that, contrary to popular belief, pain and discomfort in the urethra do not always drive the sufferer to action of any kind. Recently, in one west-coast epidemic of gonorrhea among high school students, a number of the boys, cowering in fear and ignorance, had lived with their symptoms for *weeks.*

As I look at official VD statistics from the Armed Forces, I feel that it may be totally unnecessary to mention the following; but, because rarity may lead to carelessness, I will remind you that, in the female, the identification of either gonorrhea or syphilis may present real problems, to which we may now have some answers.

I am sure that none of us wants to make a diagnosis of venereal disease if there is a chance of error; and for this and other reasons, we may be tempted sometimes to take the easy way out and treat prophylactically at once. But there are basic faults in this procedure. The obvious one is that we need honest and accurate morbidity figures so we can know how and where to apply our control resources to the best advantage.

(In this connection, I recall a good example—a commanding officer who once said: "From now on, there will be no more VD in my command."

And sure enough; there wasn't.)

Recently, we have heard a lot of talk about biologic false positivity. But I believe we have gone far toward solving this problem.

Initially, may I say that, on the basis of recent studies, the Public Health Service considers the better non-treponemal tests still acceptable and accurate tools for the diagnosis of latent syphilis. Their imperfections are more than balanced by their relatively low cost, wide availability, and ease of performance.

As for the treponemal tests, the TPI, properly interpreted, remains an extremely valuable diagnostic aid and research tool; but its use will continue to be limited because of its inherent difficulty and expense.

The Treponema Pallidum Complement Fixation (TPCF 50) test and the Fluorescent Treponemal Antibody (FTA) tests hold real promise. However, the Reiter Protein Complement Fixation test is relatively cheap and easy to perform; is the most practical and adequate treponemal test being performed today; and is becoming increasingly available.

The diagnosis of gonorrhea presents problems, particularly in proctitis, or in almost any locus of gonorrhea in the female. As you know, none of these conditions may be diagnosed satisfactorily by a smear, and anything may happen to a culture.

But, in the near future, our Venereal Disease Research Laboratory promises to provide us with a definitive test for gonorrhea using a fluorescent tagged antibody technique.

The subject of gonorrhea brings to mind another problem which we will have to face —that of resistance. As yet, there is no evidence of a penicillin resistant treponeme, but you probably have heard that certain strains of the gonococcus are beginning to show such resistance. This hypothesis is difficult to demonstrate, particularly in the American Theater. But, there is ample evidence that certain clinical cases, particularly in women, are requiring as much as ten times the amount of penicillin to cure as we considered to be an adequate dosage only a few years ago.

Penicillin, however, still is the drug of choice, except in the relatively few cases where it cannot be tolerated. Penicillin sensitivity does threaten to present problems in the future; but we are preparing to meet those problems.

We can now treat gonorrhea adequately with streptomycin and tetracycline; and we should soon have adequate evaluation of tetracycline and erythromycin schedules for syphilis.

So much for diagnostic and treatment problems. The next problem which we might consider is the quality of the 2936—contact report form—the confidential medium for the exchange of epidemiological information. I think military regulations require at least one of these reports for each VD patient. But out of 1200 such reports on syphilis and 20,000 on gonorrhea which emanated last year from Armed Forces installations, only 114 cases of syphilis and 4800 cases of gonorrhea were identified.

Actually, only slightly more than half of those named contacts to the military in this country could even be located.

You probably know that the percentage of locatable contacts originating with civilian agencies is very much higher than this.

Of course, you might protest that contacts of the military are more *casual* than those of civilians. And *yet,* there have been notable exceptions to the average quality of military interviewing—where an alert program on one installation, although not quite meeting civilian contact report quality, was producing results consistently from *twice* to *four* times better than surrounding military installations in the same area.

Now I know that you have problems just as we have problems. But we *do depend* on your assistance a great deal, and we appreciate that assistance.

And further, I sincerely believe that, whether or not you acknowledge a VD problem *per se,* you military surgeons have a genuine responsibility to your own people and to the general public, to take maximum advantage of your opportunities to assist in the practical eradication of venereal disease from this country—particularly of syphilis at this time.

After all, a large amount of travel is performed by Armed Forces personnel, and much of it very rapidly. And many thousands of your young men come to this continent directly from areas where venereal disease is almost completely out of control. Furthermore, these young men are ex-civilians; and most of them will be civilians again.

Now, before closing, I am going to leave you with three suggestions—more than suggestions—*supplications.*

1. Will you maintain an attitude toward venereal disease which is strictly objective and disease oriented? This is to suggest that the attitude of the military authority toward the syphilis patient should be no different from its attitude toward the influenza patient. In this way the patient is encouraged to seek proper medical attention rather than treatment from an unscrupulous druggist or an obliging buddy with access to penicillin.

2. When the patient does appear, will you insure that a proper examination and diagnosis be made by a medical doctor, and each case be reported on the prescribed morbidity report form? This should hold true for both men and women patients.

3. Having made an adequate diagnosis, will you insure that the patient be interviewed by a trained and competent interviewer who is able to make the patient realize his or her importance in the casefinding mechanism; and to elicit *all* the contacts? This job, of course, is one which requires not only skill and tact, but a high degree of dedication and sense of mission. It is also one which requires constant evaluation and encouragement.

Now, these three rules are rather elementary; yet, followed consistently, they would contribute immeasurably to the control of venereal disease.

But of one thing we may be sure: Hiding our eyes like ostriches and hoping venereal disease will go away is no substitute for constant awareness of mutual problems and alert teamwork toward the solution of these problems and the eventual control of venereal disease.

"Patients ought to know what they pay for medicine and what they pay for medical attendance and advice. Medicines should be compounded by an apothecary who is not obliged to spend his time visiting patients. I shall devote my time to the practice of 'physic,' send my surgical cases to a surgeon and let an apothecary compound my prescriptions."—DR. JOHN MORGAN in commencement address in May 1765 at the Medical School of the College of Philadelphia.

Stilbestrol—Induced Remission in Polycythemia Vera

By
LOTHAR WIRTH, M.D.

THE therapist's dilemma is obvious in a case of polycythemia vera with two previous myocardial infarctions. Phlebotomies predispose to thrombus formation[1] and may precipitate myocardial infarction in the presence of pre-existing cardiac pathology.[2] The drugs currently prescribed for polycythemia vera are even more hazardous: radioactive phosphorus may cause leukemia[3] and busulfan may depress normal hemopoiesis.

In view of this the patient reported upon here decided against specific therapy. Content to observe the natural cause of his polycythemia vera, the following blood values are available in this 50 year old man: Dec. 12/58, RBC 6,720,000, WBC 17,600, Hgb 20 gm.; Sept. 22/59, RBC 8,743,000, WBC 18,700, Hematocrit 70%.

Since September 1, 1959, the patient has been on 1 mg. of stilbestrol daily, as it had been suggested that female sex hormones have a beneficial effect upon the coronary system.[4]

Continued observation of the blood showed: Oct. 14/59, hematocrit 65%; Nov. 24/59, hematocrit 61%; Dec. 8/59, hematocrit 60%; Jan. 5/60, hematocrit 56%; Jan. 13/60 hematocrit 56%; Jan. 13/60 hematocrit 54%, RBC 7 million, WBC 10,700; Jan. 25/60, hematocrit 54%, RBC 6,240,000.

Coinciding with the improvement in this patient's blood values were a reduction in the size of the enlarged spleen and liver. The patient feels well and there is at this time absence of the many symptoms which were part of this disease. It seems reasonable to assume that stilbestrol produced the remission in this case.

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VACCINATE FOR POLIO

Factors Influencing Drug Costs*

By

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THE cost of drugs in medical care has received considerable attention in the press and by the Senate Antimonopoly sub-committee under Senator Kefauver in recent months. While the patient in a Federal hospital does not pay for the drugs prescribed for his use and he therefore is not directly concerned, the cost of drugs in a facility may have a direct bearing on the type of medical care he receives. Our pharmacy activities do not embrace buying and selling, where the quantity of drugs bought depends on the volume of drug sales; they include providing drugs for patients within a fixed budget. If the number of patients increases, we attempt to provide drugs within the budget limitation, for if additional money is received, it ordinarily must be obtained by curtailment of another activity of the health program.

The policy and attitude of the hospital regarding the handling of drugs also can be very important factors in drug costs.

I will discuss separately and briefly these important aspects of pharmacy operations which affect the cost of drugs: prescribing and dispensing, patient understanding of the use of medication, automatic stop orders, pharmacy and therapeutics committees, storage, security, stock control, and procurement. Not only is station policy and procedure involved, but there is a need for a continuous educational program, not only for hospital staff outside the pharmacy but for the pharmacy staff itself. Such staff education is a responsibility of the pharmacist.

Drugs are extremely important in the prevention and treatment of disease. If drug costs are unnecessarily excessive, the station may be jeopardizing the quality of medical care through expenditure of monies that should have been used on other needed items or other purposes.

PRESCRIBING AND DISPENSING

The physicians' prescribing techniques and habits can have considerable influence on the cost of drugs. In prescribing medication for an out-patient, only enough medication should be given to last until his next visit or for the anticipated duration of the illness. It is wasteful and expensive to prescribe 60 ml. of nose drops when 15 or 20 ml. would have been sufficient, or 100 tablets to be taken once a day when the patient will return for another visit within 30 days, or 1 ounce of an ointment for applying thinly to an area of 4 sq. cm. twice a day for four days. Many physicians do not realize how long a certain quantity of a drug will last unless it is brought to their attention. For instance, a 60 ml. bottle contains 12 teaspoonful doses (calculated at 5 ml. to the teaspoonful), enough for 3 days if taken one teaspoonful every four hours while awake. A 90 ml. bottle contains 18 teaspoonful doses. A one-half bottle of nose drops contains 240 drops or about 15 droppersful. Sixteen tablets will supply medication for four days if taken one tablet every 4 hours while awake. Two ounces of an ointment may be enough to cover the entire body if spread evenly and thinly. When more than enough medication is prescribed and dispensed, the unused portion is usually wasted: it may be placed in the cabinet only to be thrown away later.

PATIENT UNDERSTANDING OF THE USE OF MEDICATIONS

How many times have you seen a patient receive a bag of prescriptions from the pharmacist, and I mean literally a "bag of prescriptions," move a few feet away from

* Presented at the 66th Annual Convention of the Association of Military Surgeons of the United States, Washington, D.C., November 9-11, 1959.

the counter and, with a puzzled look on his face, take the prescriptions out one by one, look at them and study the label and the bottle? How much better it would have been if the pharmacist had shown the prescriptions to the patient one by one; and if he had read the directions to the patient to make sure that the individual was clear as to the use of the prescriptions and that he fully understood the directions. While the directions may be perfectly clear to the pharmacist, they may be so much "Greek" to the patient. Sometimes I think we take too much for granted that the physician has explained all to the patient. The Food, Drug and Cosmetic Act, among other things, requires the following information on drug packages: quantity of dose; frequency of administration or application; duration of administration or application; time of administration or application (in relation to time of meals, time of onset of symptoms, or other time factors); route or method of administration or application; and preparation for use (shaking, dilution, adjustment of temperature, or other manipulation or processes). Is not the patient who receives a prescription entitled to know as much about the medicine in his prescription? It is part of the pharmacist's responsibility to inform the patient of pertinent facts concerning his medication. The patient should also be advised of side reactions that may occur, such as drowsiness, dryness of the mouth, and blurring of vision. If he has been advised that such reactions may occur, then he will not be unduly frightened if and when they do. There are also some who subscribe to the belief that if one is good, two are better, so take three. A patient should be shown the medicine and advised just how to use it—for instance, "The foil is to be removed from the suppository before it is inserted in the rectum." And every patient should be advised to keep the medicine out of the reach of children. This is the pharmacist's only contact with the patient and he should utilize the opportunity. If a patient does not take the medication as it was intended to be taken, he may not obtain the desired results. The pharmacist's talk with the patient is time well spent that can obviate the need for a patient making an extra trip to the physician to obtain more medicine which inevitably means increased drug costs.

Automatic Stop Orders

Automatic stop orders are designed to control the use of dangerous drugs by eliminating their continued use beyond a designated period of time unless the order is specifically renewed by the physician. With few exceptions, most drugs should be taken only for a specified length of time. When drugs are continued beyond the time of their usefulness, then there is unnecessary wastage. In most hospitals operated by the Division of Indian Health, a three-day limit is set for narcotics and dangerous drugs such as anticoagulants, with a time limit of 7 days on all other drugs. However, if the physician designates a specific number of doses, or a specific period of time during which the medication is to be taken, then the automatic stop orders do not apply.

Pharmacy and Therapeutics Committee

The pharmacy and therapeutics committee has proven to be a valuable aid not only in providing better medical care but in reducing drug costs as well. Since two of the committee's primary functions are to select the best drugs available and to prevent unnecessary duplication, the formulary should consist of drugs with proven therapeutic action and a minimum of duplication. Since the Federal agencies operate on fixed budgets, it is the committee's responsibility to consider the cost of a drug when deciding between two drugs with similar or identical pharmacologic and therapeutic use. The pharmacy and therapeutics committee can also recommend the adoption of adequate policies to control the use of expensive medications as well as the trial of new drugs that are highly recommended by pharmaceutical houses. The pharmacy and therapeutics committee should also recommend the adoption of a policy to control the use of non-

formulary drug samples. A patient may be started on a drug sample. When the sample stock is depleted, pressure may be exerted on the hospital to purchase an additional quantity. Then maybe 100 tablets are purchased and only 50 used, with the remaining 50 left to collect dust and deteriorate on the shelf.

Security

Proper security should be maintained on all drugs at all times not only because of the expense of many of the drugs, but also because of the potency of numerous drugs in use today and the danger to the individual if they are improperly used. Security applies to each place in the facility where drugs are stocked or stored—the storeroom, the pharmacy, clinics, and the nursing stations. All drugs should be kept under lock-and-key except when authorized personnel are in attendance. The drug cabinet at the nursing stations and clinics should remain locked except when drugs are being prepared for administration to patients. The central stock of drugs should be in a separate locked storeroom so that only authorized personnel may have access. Employees may have pressure exerted by friends or relatives to obtain drugs; some individuals may experience a feeling or importance by unofficially obtaining drugs for someone else. They may not consider the act as illegal and a theft. However, such action not only costs the hospital money, it also can be detrimental to the health of whoever uses the drugs.

Storage

The potency and usefulness of a drug may well depend upon how it has been stored. If the drug deteriorates or decomposes when improperly stored, and subsequently is dispensed or administered, then the desired therapeutic result will not be obtained. Consequently, the patient will require more medication than normally would have been necessary, thereby increasing the cost of drugs. The Food and Drug Administration recently reported that many pharmacies were not storing insulin in a refrigerator though the label states—"Keep Refrigerated." The pharmacist must make sure that all drugs in the hospital, not only those in the pharmacy are stored under the proper conditions so that deterioration does not occur. Labels of many drug products indicate that they are to be stored in a "cool" place. But what is a "cool" place? The latest official definition of a "cool" place was included in the sixth edition of the National Formulary published in 1926. There may be several degrees difference in what you or I would call a "cool" place in August as compared with what we would call a "cool" place in January, or how a resident of Anchorage and Phoenix would define a "cool" place. The National Formulary XI defines a "cool" place as one with a temperature of 5° to 20° centigrade (41° to 61° Fahrenheit). Few spots in the buildings aside from the refrigerator, maintain a constant temperature as low as 68° Fahrenheit. All drugs should at all times be properly stored to ensure the desired potency.

Stock Control

Good stock control at each location where drugs are stocked or stored is essential—in the storeroom, pharmacy, nursing stations, and clinics. Full utilization of drugs cannot be affected if they are allowed to become obsolete, deteriorated, or overstocked in any of the above locations. Without adequate stock control records to indicate usage rates and seasonal changes in demands, stocks may be depleted. This, in turn, may necessitate emergency purchasing of drug items from a local source at increased cost, while an overstock of drugs may result in deterioration and obsolescence and complete loss of the funds expended. Consideration must be given not only to changes and rates due to seasonal fluctuation but to the preferences of the physicians on the staff as well. If a physician who is the only one using a large amount of drug "x" is to be transferred on July 1, then the usual quantity of drug "x" should not be ordered on June 30. Drugs with expiration dates should be subject to extra control measures so that none

will be used beyond the expiration date. The Food and Drug Administration has issued these pertinent instructions: "When the expiration date of a drug is passed, such drug should not be used unless the drug has been assayed to established potency and recertified by the appropriate Federal agency." Without an assay of a drug that has expired, no one knows whether its strength is 110 per cent or 10 per cent of the stated potency.

Purchasing

Drugs should be procured from the source of least cost but the quality of medications should not be sacrificed for price, however. Savings can be made on drug costs through such practices as quantity buying, but safeguards must be set up to prevent the ultimately more expensive practice of overbuying with subsequent deterioration of the excess stock. Purchasing of the basic ingredients required for bulk compounding of medicines may help lower drug costs. Even the containers for drugs have a bearing on the cost of operation. If 100,000 prescriptions are dispensed and a saving of 1 per cent can be made on each prescription bottle or container, a saving of $1,000 is made.

Summary

With the high cost of drugs, it is important that every effort be made to eliminate wasteful practices in the utilization and control of drugs. Each factor mentioned must be dealt with separately to obtain the greatest utilization of funds.

"The voices that will serve this country, and indeed save it, will be those of stern men demanding hard things. They may not yet do as well in the Gallup polls. They will be listened to sooner or later. For they will shatter the belief, now so prevalent among us, that affluence is greatness. It is not. In the history of human society, it has not seldom been the case that when riches were devoted to luxury, it was the mark of their decline."—Walter Lippmann

Centralized Tray Service

By
MAJOR LOUISE L. STILES, AMSC
AND
CAPTAIN PATRICIA L. ACCOUNTIUS, AMSC†

(With three illustrations)

THE "New Hospital," the shining green and white multi-storied building facing the China Sea at Camp Kue on Okinawa, was dedicated in April and formally opened in May 1958. The 250 bed hospital, on a 500 bed chassis for possible expansion, has three 24 bed wards, three 12 bed wards and two 8 bed wards and many single and double rooms. After thirty-eight months in construction the hospital has much to offer in the way of new equipment and modern up to date facilities for efficiency and comfort in the care of patients.

One of the most up to date and modern attractions in the Hospital is the *"Air Flight Food Service"* operation as formerly tagged with this name during the early experimental stage at Valley Forge General Hospital, Phoenixville, Pennsylvania, in 1955. The new method of serving food is officially called "Centralized Ward Tray Service." This type of tray service has proved highly satisfactory and was adopted by The Surgeon General for implementation in Army Hospitals in the United States.

Instead of sending food in bulk in electrically heated food carts to various Ward Diet Kitchens where trays were assembled and served to the ward patients, the food is served directly on the patient's tray in the Central Kitchen. The tray is sent to the wards in stainless steel conveyors which are electrically heated in one compartment and mechanically refrigerated in another.

U. S. Army Photo

FIG. 1. Trays are prepared with cover, silverware, glassware and cold food.

The implementation of Centralized tray service requires coordination of all administrative and professional service in the hospital. Considerable time and effort is necessary for basic planning.

Those who have initiated this type of tray service realize the training involved. In a foreign area where Local National personnel are assigned to the Food Service Division, it requires approximately three times the amount of time for training due to the language barrier.

Testing and training in Centralized tray service began in February 1958, approximately four months prior to the transfer of patients and facilities to the new Army Hospital. Experimenting began as soon as the seven new food carts arrived. These tests were made on the holding quality of different foods, in appearance and temperature at different lengths of time. Eggs, toast and regular meals, which had stood in the

† Both officers were formerly stationed at the Ryukyus U. S. Army Hospital, Okinawa.

Major Stiles is now stationed at the U. S. Army Hospital Fort Dix, New Jersey; Captain Accountius is at the Walter Reed General Hospital, Washington, D.C.

EDITOR'S NOTE: See also article "Centralized Food Service Versus Decentralized Food Service" by Major Josephine Lydon, AMSC, MILITARY MEDICINE, Vol. 124:599, Aug. 1959.

cart for a period of ten, twenty and thirty minutes, were tested by the Nursing Service and Food Service Personnel.

After these tests were completed, on-the-job training of the personnel began in Centralized Tray Service procedures. One cart was used on Ward 9, the Women and Officer ward, which was located near the Food Service Division. As soon as a sufficient number of personnel had been trained, another cart was put into operation on Ward 7, the Orthepedic Ward. In addition, one cart was used for testing and serving modified diets to ambulatory patients in the dining hall. With three carts in operation over a period of three months this afforded an excellent means of rotating and training Ryukyuan personnel in Centralized Tray Service procedures.

The personnel used in the basic training of five Ryukyuan cooks and twenty-five Ryukyuan Ward Attendants were two Dietitians, two Military cooks, three Ryukyuan supervisors.

In addition to the routine training of Ward Attendants, on-the-job training and class room instruction were initiated for nine Ryukyuan Dietitian Assistants or Aides. They are assigned to the Diet Therapy office, one of the most interesting and outstanding accomplishments in the training program. This was based on the job description of Medical Aid (Diets) used at Brooke Army Medical Center. They assist the Ward Dietitian in numerous administrative routines such as collecting patients' diet order cards, making diet changes, distributing selective menus, making out tally sheets and other important duties necessary to the operation.

U. S. Army Photo

FIG. 2. The carts are loaded with the hot food.

U. S. Army Photo

FIG. 3. Assistant completes tray with the hot food. This is done on the ward.

Numerous advantages of Centralized Tray Service are listed:

1. Improved tray service to patients in that they are served better quality food in a more attractive manner.
2. Greater patient satisfaction in having an opportunity to check menu and indicate size of portion.
3. Eliminates duplicate kitchen equipment on each floor.
4. Eliminates diet kitchen, reduces the cost of equipment and dishes and cost of maintenance of dishwashers, grills, toasters, and other equipment.
5. Improved supervision of trays served to patients.

6. Minimizes food waste due to unsupervised portioning and pilfering. The food waste has been cut as much as thirty-five percent.

7. Improved supervision, control and utilization of Food Service personnel.

8. Reduced time intervals between completion of preparing food and serving to patients.

9. Successful method of serving therapeutic diets without extra desk work for the Dietitian. The Ward Dietitian now has time to do her work more efficiently.

10. Reduces the amount of cleaning and paper supplies used by consolidation of the cleaning activities in the main kitchen.

11. Saves floor space which can be utilized by wards for treatment rooms, offices, etc.

12. The Food Service personnel are happier with this type of patient service. There are less kitchen problems resulting from an elimination of ten ward diet kitchens. This was one of the outstanding points brought out by the Ryukyuan Food Service personnel.

The U. S. Army Hospital on Okinawa has the distinction of being among the first overseas hospitals to initiate Centralized Tray Service. With the language barrier, the implementation of Centralized Tray Service has progressed slowly but fimly and is definitely economically sound. The financial ease of operation as compared with operation prior to the initiation of this type of service, is definitely worth the time and effort necessary for the basic planning and expenditures. Following a year of utilization, Centralized Tray Service is highly endorsed. The results are gratifying.

FOOD PREFERENCES OF MEN IN THE U.S. ARMED FORCES

A 160-page paper back book—*Food Preferences of Men in the U. S. Armed Forces*—is the product of a survey made in the Armed Forces to determine what this segment of our population likes in the way of food.

The book is full of statistics and explains the methods in which the survey was conducted. Then follows the real "meat" which shows what these people like and what they do not like. In the class of fruits fresh peaches and canned peaches rate high, but rhubarb and prunes are low on the list.

Copies of this book are available to special libraries, organizations and individuals with a "need to know." Write to Quartermaster Food & Container Institute for the Armed Forces (AMCAL-TSO), 1819 West Pershing Road, Chicago 9, Illinois, for copy.

The Yellow Fever Epidemic of 1874 at Pensacola, Florida

The Report of Surgeon J. R. Tryon, U. S. Navy

Edited by EUGENE F. KRAMER*

JAMES RUFUS TRYON was born at Coxsackie, New York, on September 4, 1837. He received a B.A. degree from Union College in 1858 and an M.D. degree from the University of Pennsylvania Medical School three years later. Dr. Tryon joined the Union Army as a surgeon in 1862, but a year later accepted a commission as acting assistant surgeon in the Navy. He retired in 1899 as Chief Surgeon of the Medical Corps with the rank of rear admiral.

Low pay, slow promotion and petty politics were endured by Dr. Tryon, but, despite them, he made more than his share of contributions to medical science and to the Navy. At Yokohama, Japan, he supervised construction of the naval hospital which was used as the medical center for the Asiatic squadron. A four-year-term as assistant to the chief surgeon in Washington gave him an opportunity to develop and display good administrative qualities. Throughout Dr. Tryon's medical journals are recorded many practical suggestions for the care and treatment of diseases and injuries peculiar to naval service.

The most spectacular event of Dr. Tryon's naval career was the yellow fever epidemic at Pensacola which is described in the medical report printed here. Yellow fever was a terrible killer at military posts located in tropical and sub-tropical areas. Epidemics broke out at one place or another nearly every year, and medical science was unable to prevent heavy loss of life. Of course yellow fever by itself was not the sole killer. Until fairly late in the 19th century, poor sites, contaminated drinking water, improper diet and makeshift sanitary facilities made military personnel susceptible to many illnesses, so there was little chance for anyone when a virulent disease such as yellow fever struck.

Such was the situation in 1874 when Dr. Tryon was sent to Pensacola. His report of the causes and course of the epidemic together with the recommendations to prevent another outbreak is a well-written, first-hand account of a baffling disease. Although Dr. Tryon did not determine the cause of yellow fever, he did confirm that it was imported from the West Indies. This fact plus the reorganization of the living quarters and of the sanitary facilities at the Pensacola base were important achievements.

RELATING TO EPIDEMIC OF YELLOWFEVER AT NAVY YARD, PENSACOLA, FLORIDA DURING SUMMER OF 1874

U. S. Naval Hospital
Pensacola, Florida
November 26th, 1874
Sir: [Surgeon General Joseph Beale, U. S. Navy, Washington, D.C.]

My orders to the Navy Yard, Pensacola, Florida during latter part of the recent severe epidemic of Yellowfever necessitates an account of the appearance of the disease at that point, its course and termination and its effect upon officers and men of the Navy attached to the Station.

The Navy Yard, Pensacola, Florida is situated in Latitude 30° 20′ 35″ north, and Longitude 87° 16′ 0″ west, and is built on the north side of a bay . . . directly opposite Santa Rosa Island, and five and a quarter miles in a southwest by west direction from the City of Pensacola. . . .

The population of the City of Pensacola is

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3,349 of which there are 2,085 whites and 1,250 colored. The nearby towns of Woolsey and Warrington contain a population of about 2,750 whites and 1,250 colored.

Residents in Navy Yard upon appearance of Yellowfever 79
Officers and men of the Navy (46)
Members of officers families and others (33)
On board the monitors *Cannonicus, Ajax, Saugus, Nahopac, Manhattan* and Tug *Rose* stationed in harbor there were, officers and men 85
Total present 164

At Pensacola, the sanitary regulations are very defective, and drainage imperfect. The same may be said of the adjoining towns. In the center of the Navy Yard are infected buildings used during Yellowfever epidemics of 1863 and 1867. In the rear of the Commandant's Quarters are infected Marine Barracks where the disease existed to an alarming extent during some epidemics. . . . Maximum temperature during the epidemic, 107°. Minimum temperature during the epidemic 67°. I am sorry the records will not permit me to submit complete Meteorological registers.

* * *

About the 1st of July 1874, two brigs with a virulent form of Yellowfever on board anchored at Quarantine ground above refered to. I am told upon the most reliable authority that all hands on board these vessels died of the disease. A lad of them who escaped from me perished of the fever in the neighboring swamps. While these vessels were in quarantine, there was frequent communication with them and the City of Pensacola and no restrictions existed as to communication between the Navy Yard and the City of Pensacola until September 1, 1874, after the appearance of the Epidemic at this point.

No quarantine existed between the Naval shipping in harbor and shore during the entire Epidemic.

I have been unable to learn the precise date of the strict land quarantine established by the City authorities of Mobile and Montgomery against Pensacola. It existed until November 5, 1874, and there has been no report of the appearance of the disease at those places.

I will not go into the history of Yellowfever in the previous Epidemics that have occurred in Pensacola since the first appearance there in 1765. I am a firm believer in its importation and feel confident that the Epidemic under consideration was caused by the disease being brought in the infected ships mentioned, communicated through slack quarantine regulations to the neighboring towns and Navy Yard, and aggrivated [*sic*] in the latter place by the local conditions mentioned, any one of which [is] sufficient in this latitude to intensify Epidemic causes.

The first case of Yellowfever occurred in the City of Pensacola, the beginning of August 1874, and about thirty days after the arrival of the infected vessels in quarantine. The disease spread with fearful rapidity and everyone able to leave the place did so. . . . On August 17, 1874, Captain Joseph F. Baker, U.S.M.C. who had just returned from a short visit to Pensacola was attacked with the fever and was noted in Medical Journal under date of August 27, 1874 as being of a "Pernicious Remittent Type. [He] Recovered."

The subsequent history of cases attacked, together with Captain Baker's symptoms noted in Journal leaves no doubt in my mind of its being the 1st case of genuine Yellowfever. . . . A list prepared from the above resume of cases, arranged according to date of attack . . . [follows]. It will be seen from the following table that 44 officers and men of the Navy were attacked with the disease and 17 died.

Officers attacked	*Sent to Duty*	*Died*	*Condem'd by Survey*
13	2	6	5
Men attacked			*Discharged on Pension*
31	18	11	2

Mortality—38.65 percent.

In the above number only those belonging to the Navy are included. Twenty additional cases of the disease and five deaths occurred among those belonging to officer's families and others residing in the Yard making the following totals:

No. of cases of Yellowfever in Navy Yard during Epidemic 64
No. of Deaths 22
Mortality—34.37 percent.

By referring to the number heretofore stated as living in the Navy Yard (79) and aboard the shipping in the harbor (85), it will be seen there were 164 persons present at the commencement of the Epidemic. [Here follows a list of 73 officers, men and dependents who left the Navy Yard on detached service or because of the epidemic.]

Hence 91 individuals were exposed to the continuous Epidemic influences of the disease and of this number 64 were attacked with the fever. Of the fortunate 27 who escaped, all, except 3 had suffered from the disease during some previous Epidemic. . . . Unprotected and exposed to the entire Epidemic and not attacked, 3.29 percent.

(It may be well to mention that the 3 who escaped belonged to the vessels in harbor.)* Of the whole number of cases only 4 were of Negro blood, two recovered and 2 died.

No reliable information can be obtained as to the number of cases in the [nearby] towns of Warrington and Woolsey . . . [Here follows a short note of the sailing of several vessels anchored off Pensacola.].

There was frost on the 2nd and 3rd of November. [Italics by editor]

On November 13th the Yellowfever ward in the Hospital was abandoned, infected clothing and bedding destroyed and convalescent patients removed into a part of the building cleaned and prepared for the purposes. By the 14th, all infected hospital property and infected personal effects of officers and other had been surveyed and destroyed. Every building in the Yard where the disease had existed, Hospital, Marine Barracks, Guardhouse, Officers Quarters, etc., had been cleaned and disinfected, and I was able to report . . . that I considered that the Epidemic [was] over and that it would be safe for officers absent and others ordered to report for duty any time after the 25th of November, 1874. . . .

The Epidemic was most virulent in form, and fatal results resembling in character that of 1863 at this point and from what I have read not unlike the Epidemics at Shreveport and Memphis last year.

In cases attended with black vomit, death usually followed within 18 hours, and only 3 persons recovered after the fatal symptom. All ages are susceptible to the disease, children had light attacks and recovered in every instance.

That an attack of Yellowfever in a previous Epidemic acts as a preventive of the disease may be stated as a fact, so far as the recent Epidemic is concerned. I have made most thorough inquiries regarding this and have neither seen a case nor heard of a person taking the disease a second time, when positively known that the first attack was undoubted Yellowfever.

The period of incubation of the disease is uncertain, and necessarily varies in different individuals—with those present on the station before and after the outbreak of the Epidemic, and continuously exposed to its causes, no specified time can be stated. But with those arriving from the North during the Epidemic unprotected and unacclimated, the attack is almost certain to take place within 15 days after exposure. . . .

I know of no reliable protective course to be pursued by individuals during Epidemics of Yellowfever to prevent infection. To maintain a healthy condition of the system appears to be the only safeguard, and to do that in the midst of all the depressing surroundings seems impossible.

Acting Assistant Surgeon Warren of the Army, in his report of the Epidemic of Yellowfever at Brenham, Texas in 1867, mentions "White Mustardseed" as a prophylactic, and states that he administered a tablespoonful of the remedy with an ounce of

* This sentence is crossed out in the text.

whiskey every morning at 11 o'clock to all in the command, numbering 60 men, thereby preventing the appearance of the disease in the camp located one-fourth of a mile from the town, where the fever broke out August 8, 1867, became Epidemic and continued with fearful ravages.

No mention is made of a quarantine existing between the town and camp, on the contrary men were exposed in every way as much as any of the other inhabitants.

The following facts may be gleaned from what has been written:

1st That the disease was imported.
2d That it made its appearance at Pensacola and at the Navy Yard by slack quarantine regulations.
3d That it spread rapidly by non-isolation of first cases and by the intensifying Epidemic cases on the Station.
4th That both percentages of attack and perentages of death were unusually large.
5th That the percentage of escape was exceedingly small and that the chances of persons unprotected taking the fever were sufficiently great to make exemption from the disease almost impossible.
6th That all persons were susceptible to the fever.
7th That the period of incubation of the disease is uncertain in the majority of cases.
8th That there was no remedy used that acted as a prophylactic against the disease.
9th That all individuals attacked with Yellowfever in some previous Epidemic escaped infection.

The disease has a definite course to run, commences with a chill, and is followed by the usual pyroxysm of fever lasting from 48 to 72 hours. There is severe headache, accompanied with intolerable pain in nape of neck, back and limbs. The tongue is furred but moist; eyes suffused and infected; pulse from 100 to 125 per minute, temperature ranging from 101° to 105°† and in a majority of cases irritability of stomach from the first.

The patient is generally nervous and restless, and constantly, I may add, under the influence of a mild mania, readily discernible by those familiar with the disease. . . . Througout the disease it should be the endeavor of the physician to control if possible the mind of the patient by giving every encouragement.

As little medication as possible seems to me preferable, perfect rest to mind and body should be enjoined. In the first stage [give] a hot mustard footbath and a dose of castor oil, citrate of magnesia or Seidlitz powder. Perspiration should be encouraged by keeping the patient well covered, but not too warmly; warm drinks, a little ice water at a time or small pieces of ice, if acceptable to the patient, can be given without danger.

The room should be well ventilated, and kept if possible at a uniform temperature. Without this precaution, a sudden change of weather, likely to occur at any time during an epidemic, will prove disastrous to the patient. Closing up doors and windows and smothering the sufferer with blankets until nearly "boiled" I consider does more harm than good. No solid food should be given. Strength must be sustained throughout by broths and the mildest diet. . . .

Now that the severe lesson taught by the recent Epidemic is before us, it may not be out of place to mention in this connection some consistent measures that may be taken to prevent the outbreak and spread of disease on the Station during the summer of 1875 [Tryon was writing in the fall of 1874]. The sanitary regulations of the Navy Yard proper are perfect, the drainage is good, supply of water ample and pure. . . . I can see no cause for disease if the following recommendations, reasonably explained, favorably considered:

1st. The removal from the harbor on or before the first of June 1875 of the infected [ships]. *It is known that the effective cause of Yellowfever is completely destroyed by a freezing temperature,*‡ hence all infected ships should be subjected to such a tempera-

†A chart included in the Journal shows that Surgeon J. B. Ackley had a temperature of 106.2° when he died.

‡Editor's italics.

ture for purification until some other mode is known and sufficiently tried to guarantee a like success.

2nd. The removal from the Yard of the infected hospital buildings. Assistant Surgeon George M. Sternberg, U. S. A., in his valuable report on Yellowfever states that the ". . . presence of decaying timbers, such as are found about old frame houses, ships and wharves is favorable in some manner to the preservation and increase of the germ of the disease. . . ."§

3rd. The abandonment of the stables as Marine Barracks and removal of the men to some point outside the Navy Yard. . . .

4th. To fumigate early in the summer all buildings that have become infected during the Epidemic. . . . To prevent the reappearance and prevalence of an *Epidemic* of Yellowfever, a strict quarantine should be established as early as June 1st of each year to continue until frost, and rendered effective by being placed under the control of either the Army or Navy authorities on the station. . . .

Since [my] arrival, all labor required to enable me to carry out your wishes has been greatly facilitated by the kind assistance of Captain A. A. Semmes, U. S. Navy, Commanding, Station.

I am Sir, very respectfully
Yr. Ob't Sev't
J. R. Tryon,
Surgeon, U. S. N.

§ Ideal breeding places of course for mosquitoes.

TEN RULES FOR THE SUMMER

1. Have all immunizations (polio, tetanus, etc.) brought up to date.
2. Do not overexpose yourself to the sun.
3. Do not swim in unguarded pools.
4. Avoid polluted water supplies.
5. Avoid extreme fatigue, overeating, too many cold drinks.
6. Guard against poisonous plants, insects, animals. In other words know the area through which you may travel and take the necessary precautions.
7. Be careful in your driving.
8. Have your car maintained in good mechanical condition at all times.
9. Plan reasonable trips for the time available for them.
10. Respect the rights of others.

UNCLE SAM WILSON OF TROY SUPPLIED BEEF TO THE UNITED STATES ARMY DURING THE WAR OF 1812 - STAMPING HIS BARRELS WITH THE LETTERS 'U.S.' - THIS BEEF BECAME KNOWN TO THE ARMY AS 'UNCLE SAM'S' AND THIS FAMILIAR APPELLATION WAS THEREAFTER BESTOWED ON OUR OWN GOVERNMENT

UNCLE SAM

MILITARY MURAL PAINTING

by

GEORGE GRAY
AMERICAN MILITARY INSTITUTE
WASHINGTON, D.C.

EDITORIALS

Medical Statistics

THE annual report of any business is one of the most important compilations made for the business. Through this detailed report the state of health of the business, so to speak, is determined.

The state of health of the nation, of the military establishment, or of any of its units is determined from the medical statistics pertaining to those groups. The business of health relies on those statistics. The data must not be submitted only for an annual report but if the figures are to be of any value at all they must be compiled at regular short intervals. Even daily reports are necessary at times. These reports are possible with modern equipment which, given the figures, quickly comes up with the needed answers.

There was a time when all this calculation seemed unnecessary but as the trend went to preventive medicine, health, life, and accident insurance the demand came for health statistics. Without them sound programs for disease control and tables for insurance would be in the realm of mere speculation.

The Army early in the nineteenth century felt the need for the compilation of medical statistics. It was Joseph Lovell, the first Surgeon General to be appointed (April 18, 1818) who recognized the importance of such records. It was he who directed that the medical reports be sent to his office in Washington. Of course, he did not live in the days of the telegraph, the telephone, the airplane, and all the modern calculating machines so necessary now for providing elaborate tables and compiled statistics. But ideas have a way of stimulating other ideas and it was Lovell with his idea to tabulate the medical data of the Army which laid the foundation for the detailed reports that can now be furnished and upon which action can be taken.

The Medical Records Division of the Surgeon General's Office of the Army is one of his most important offices. In that division some years ago was a medical officer who was interested in biostatistics. That officer, Albert G. Love, still living in Washington, D.C., had attained the rank of brigadier general by the time of his retirement in 1941 after thirty-seven years of service. His knowledge and past experience have been added to that of the present chief of the Medical Statistics Division, Colonel Eugene L. Hamilton, and Ida Hellman of The Historical Unit of the Army's Medical Service in the preparation of *Tabulating Equipment and Army Medical Statistics.** In this book we learn that the scholarly Colonel John S. Billings of the Army Medical Corps suggested that certain medical data might be recorded by punching cards, later to be run through an electric tabulating machine invented by Dr. Herman Hollerith of the Census Office in Washington. This now was in the latter part of the nineteenth century.

The way was now open for faster travel on the medical statistics highway. More information could be compiled in a shorter time. With this information means could be taken to strike at particular areas where the morbidity and mortality rates were out of line. Then with more rapid means of com-

* Major General Silas B. Hays, formerly Surgeon General of the Army, was the one who suggested that *Tabulating Equipment and Army Medical Statistics* be prepared. Love, Hamilton, and Hellman are the authors. The book was prepared and published under the direction of The Surgeon General by The Historical Unit, U. S. Army Medical Service. For sale by the Superintendent of Documents, Government Printing Office, Washington 25, D.C., at $2.00 a copy.

munication the strike at these areas could be made more quickly.

The history of all this is recorded in the aforementioned book which will be of particular interest to those dealing in the field of biostatistics in their relation to health statistics.

Utilizing the Professions

IN DAYS gone by, and may they never return, time of professional men in the Armed Forces was on numerous occasions wasted. Junior and not so junior officers of the Medical Services were ordered to be members of boards that never considered a medical problem, nor one with a remote medical connection.

Many can remember such boards that were convened for the investigation of some accident where only the vehicle was damaged, a mattress was burned, or some piece of government property was lost. It was routine, or almost routine in those days, to have a doctor on the board. The many hours spent on courts-martial duty are recalled also.

The high esteem held for the doctor might have been the reason for these details.

Well, apparently no one was hurt and no patient suffered because the load could be carried by some other person of equal medical ability, or the person who was detailed to such non-professional duty made it up to his patients by returning to the hospital and working into the night. Such was the waste of professional time.

But times have changed. We are now realizing that to train highly qualified persons, not only physicians and dentists and their allied personnel, but physicists, chemists and all types of skilled persons takes time. We are beginning to realize that to take up the time of such persons on duties or training that they will never use is not only ridiculous but wasteful of time and energy and money.

We are finding in the hospitals that we can train persons with reasonable amounts of intelligence and interest to do many things in the care of patients that formerly would require the time of the professional persons. More of this type of training must be done in the Armed Forces and in civilian life if we are going to meet the demands for patient care. We must conserve the time of the professional people.

Dr. Owen H. Wagensteen of Minneapolis in his address before the Convocation of the American College of Surgeons, October 2, 1959, in Atlantic City said: "Our medical schools cannot begin to supply the number of interns necessary to staff our hospitals. Moreover, in hospitals where interns are needed most, they are least in evidence. Long before the novice of 30 years hence comes forward to receive his diploma from the College, I believe that the slave labor of the intern will have come to an end! A large share of his present duties will have been taken over by hospital aides, high school graduates who have been given a two-year period of special medical and hospital training.

"It seems to me that this is an important field for both young men and women. The persons most skilled in getting into the veins of prospective blood donors in our Red Cross centers during World War II were nurses trained for the purpose. Much of the routine ward work of the surgical intern of today, very important in itself, can and should be done, I believe, by such hospital aides. The hospitals of America can, I am very certain, absorb over a period of the next decade a quarter of a million or more such people. We need to give thoughtful and serious attention to the training of operating room technicians, medical surgical, urologic, orthopedic, neurosurgical and other types of hospital aides. The program of the Army during the recent war with hospital corpsmen demonstrates very well what can be done on this score. The time has come to cease haggling over trivial matters of protocol and to develop in our existing hospitals throughout our land, under the combined auspices of hospital administration and nurs-

ing personnel, areas in which young persons anxious for the tasks can be trained for this important work, which now too frequently goes neglected, to the anguish and heartache of our patients, their relatives, and the medical profession.

"There is a good deal of heavy as well as routine work to be performed on the wards and an increasing number of young male hospital personnel will be welcomed there, I believe—even by the nursing profession."

Here is good advice. It amounts to saying "Utilize the individual's talents—don't waste them."

There is a responsibility placed on the trained individual also. If his time and talents are to be used he must constantly seek to further improve himself and not halt in his own training. He must discipline himself to use available time to gain new knowledge in his field of training. He who does not advance soon falls behind the others who have overtaken him and are speeding forward to learn more.

NAVY WARRANT OFFICER PROMOTIONS ACCELERATED

Warrant officer promotions will soon be speeded up for both Regulars and Reserves. Now regulations have reduced the service-in-grade requirements for the temporary promotion of warrant officers as follows:

W-1 to W-2, from three years to two years.

W-2 to W-3, from six years to four years.

W-3 to W-4, from six years to four years.

The reduction becomes effective with the fiscal year 1961 selections (to be made in May 1960).

Permanent warrant officers who are advanced temporarily will be issued permanent appointments to their new grade when they have completed the following service requirements: Three years for W-1 to W-2, and six years for W-2 and W-3 to W-3 and W-4, respectively.

Permanent warrant officers who twice fail of selection for temporary promotion to the next higher grade shall be retired—if eligible—or have their appointments terminated.

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Around the World

(Ser. III, No. 19)

By
Claudius F. Mayer, M.D.

SOVIET RUSSIA's latest medical advances may be known to the American specialists, but to a large number of physicians in our country Russian medicine remains an unread book. Many members of the medical profession may *a priori* condemn it in spite of its undeniable achievements. Some time ago, several members of the Medical Sciences Academy of the U.S.S.R. discussed the *progress of Soviet medicine* in an attempt at comparing the old regime's ways with the sweeping changes of the *last forty some years*. This is what they generally succeeded in doing during the new management of their State:

Formerly, there used to be a wide gap between the scientific advances and the practice of medicine. Some of their medical organizers such as N. A. Semashko, and Z. P. Solovjev made it possible to bring in close correlation the advances of scientific medicine with the work of the practitioners and that of the public health officers. A good example of the *correlation of scientific thought and practice* is the fate of the Pavlovian doctrine. Pavlov's ideas are now permeating the entire Soviet science and social life and industrial production. As an *expansion of the Pavlovian doctrine* on the conditioned reflexes and on the activities of the higher nervous system, Bykov and co-workers showed that the origin of hypertension and peptic ulcer can be also ascribed to the central nervous system. Such a recognition has made way, of course, for a new method of successful treatment.

The entire field of *Soviet physiology* is dominated by I. P. Pavlov. After his death in 1936, his work was continued by his greatly expanded school (M. K. Petrova, I. P. Razenkov, L. A. Orbeli, K. M. Bykov, A. G. Ivanov-Smolensky, A. D. Speransky, N. A. Rozhansky and others). A great portfolio of facts and laws was collected to show that injuries of the central nervous system play an important role in the development of a number of remote diseases. The Pavlovian School developed a special cortico-visceral physiology and pathology, and spent much time on the study of the neurohumoral regulations of the vital functions of the organism. L. A. Orbeli and co-workers studied chiefly the ramifications of Pavlov's doctrine on the role of the central nervous system in the trophic regulation of the organism by way of the sympathetic nerves; they also studied the physiology of the cerebellum, the proprioceptive reflexes, the nature of the muscular tonus, the problems of an evolutional physiology, problems of pain, etc. P. S. Kupalov investigated the cortical representations of the unconditioned reflexes. Ivanov-Smolensky studied the higher forms of cerebral work, the speech, and so-called *second signal system*. E. A. Asratjan investigated what kind of secondary changes may develop in the body when the central nervous system is injured. But it would be too long to enumerate all the fields into which the spirit of the Pavlovian physiologists expanded.

Soviet biochemistry has also made a great progress. We may mention A. V. Palladin, and the general biological school in the Ukraina, the studies on the biochemistry of the muscular contraction, of the muscle and of the nervous system (V. A. Engelhardt, M. N. Ljubimov), studies on the transamination of the amino acids (Braunstein, Kricman), the nitrogen metabolism of the muscle (S. E. Severin), the biochemistry of nutrition (B. I. Sbarsky), on the metabolism of malignant tumors (Engelhardt, Parshin, Tustanovsky), and so on. The *pathology* has also advanced, and it is dominated by the neurism of Speransky and of his co-workers. Some problems of general pathology were

attacked by A. A. Bogomolec and his school. He is the one who developed a special doctrine on the role of the connective tissue in the normal organism and in diseases (*cytotoxins*). Others studied the genesis of atherosclerosis (N. N. Anichkov), and brought experimental evidence for the role of the cholestrol metabolism in the atherosis of the arteries.

Among the *Soviet pathologists,* A. I. Abrikosov had great influence upon Soviet clinical thoughts. I. V. Davydovsky investigated the pathology of exanthematic typhus, and found changes in the central nervous system. During the Second World War he was especially engaged in the biology and pathology of wounds. In rheumatology V. T. Talalaeva described a typical tissue reaction known as the granuloma of Talalaeva. Other Soviet pathologists were successful in the field of hematopathology (P. P. Goncharov, Z. G. Frenkel, I. R. Petrov, P. N. Veselkin), in the study of the pathology of anoxia (N. N. Sirotinin, N. A. Fedorov), in the field of compensatory physiopathological functions (A. D. Ado, R. E. Kavecky), in the study of various aspects of radiation injuries (P. D. Horizontov, I. A. Piontovsky, N. A. Kraevsky).

The *Soviet pharmacologists* and chemists synthesized many new medicaments. Expeditions were organized to discover *medicinal plants,* and to isolate new alkaloids (A. P. Orekhov) such as platiphyllin, pachycarpin, salsolin, and so on. Many plants were studied by the Siberian pharmacologist, N. V. Vershinin. Others described new methods for the study of pharmacological actions (N. P. Kravkov, M. P. Nikolaev, C. V. Anichkov, V. M. Karsik). The investigations of others (Z. B. Ermoljeva, G. F. Hause, H. H. Planjelec, etc.) resulted in the preparation of new antibiotics such as ekmolin, albomycin, colimycin, actinoidin, grisemin, mycerin, aurantin, etc.

In the field of *microbiology and virology,* the most important for scientific progress was the close contact with epidemiology, parasitology, and the clinic of infectious diseases. This union of theory and practice enabled the introduction of mass measures against the infectious diseases. It was especially during the "Great War of the Fatherland" that the efficiency of the new system became evident. In spite of the mass movement of people during the War, *Russia has not seen any real epidemics.* This is in strong opposition to the times of the Russian Civil War (1917-1918) when the country was devastated by exanthematic typhus and other infectious diseases. Many new preventive methods, new vaccines and sera have been introduced, and the preventive vaccinations were especially excellent against tetanus.

In the field of the theory and of the practical combat of diseases, the most significant was the doctrine of E. N. Pavlovsky about the "*natural foci*" ("prirodnaja ochegovost") of infectious agents and infectious diseases. A series of laboratory and experimental studies of Zil'Ber, Chumakov, Levkovich, Smorodincev and others clarified the nature of many infectious diseases, the transmission of the Siberian forest or spring-summer encephalitis, the nature of new forms of rickettsiasis at various places of the Soviet Union. The works of Smorodincev, Solovjev, Zhdanov and others were important for influenza, while Chumakov devoted much time to poliomyelitis.

Among the clinical subjects, *Russian cardiology* was one of the branches which made great progress. The school of G. F. Lang produced a new theory on the *origin of hypertension* which, in the Pavlovian sense, is a form of neurosis. Due to various nervous influences, changes are caused in the suprarenals and in the blood supply of the kidneys which allow free hand to such substances as renin. Anichkov suggested a new theory on the origin of arteriosclerosis. Myocardial infarction or *coronary disease* has been in the foreground of Russian research since the article of Obrazcov in 1910; recently, new ideas were promulgated on coronary thrombosis by L. N. Fogeljson, P. E. Lukomsky and others which led to a type of therapy able to keep about 90% of the heart-attacked persons alive. In gastroenterology, too, the Pavlovian doctrines are dominant, just as in Soviet neuropathology and Soviet

psychiatry. A number of *neuropsychiatrists* and neuropathologists (including A. M. Grinstein, E. K. Sepp, I. N. Filimonov, G. I. Markelov, N. I. Grashchenkov) worked out a theory of the neuroses in the Pavlovian ideology. The neuroinfections were studied in a joint effort with the virologists. M. S. Margulis and A. K. Shubladze devoted some time for the investigation of disseminated sclerosis (we still remember the unfortunate effort of Shubladze to produce a vaccine against this sickness!!).

Soviet surgery has also made great steps forward. Vishnevsky's novocaine blockade is an important achievement. A. D. Speransky tried to introduce the neurogenic origin of diseases into surgery (which should, of course, completely change a surgeon's approach to many so-called surgical diseases). The works of N. N. Burdenkov (former surgeon general of the Soviet Army) included the treatment of shock, some new ideas on the treatment of wounds, on the prevention of wound infection, therapy of osteomyelitis; many of these innovations received their best trial on the battlefield during the World War of the forties. In the surgery of the gastrointestinal tract, S. I. Spasokukocky and A. G. Savin excelled, while the field of vascular and cardiac surgery was advanced in the hands of A. N. Bakulev, A. A. Vishnevsky, B. V. Petrovsky, P. A. Kupryanov, and others. The chief coriphei of neurosurgery were Burdenkov and A. L. Polenov.

Among the medical specialties we may mention *ophthalmology*. In recent years, the number of eye clinics has increased *in the Soviet Union*. There are ophthalmological hospitals even in Jakutsk, Siberia, trachoma institutes at Cheboksara and Ashkhabad, ophthalmic clinics associated with the medical institutes at Stalinabad, Frunze, Karagande, Barnaule, Chita, Khabarovsk, and in many other districts of the country. Intensive scientific work in ophthalmology is carried out in 76 Soviet institutions (including the Filatov Institute at Odessa, the Helmholtz Institute at Moskva, the Hirschman Scientific Research Institute at Kharkov).

In addition to all these scientific achievements, the Soviet Union also claims that the *oldest people of the world* are at the present time living *under the Soviet flag*. In a roundabout way, from a daily Chinese paper, the *Anhui Ribao* (Dec. 11, 1959) comes the report—which was translated from the Chinese original by a friend of mine—that there are about one million Soviet citizens who have reached their centennial birthday at the present time. In Azerbeidjan, there is living an old man by the name of *Muhammad Aivasiv(?)* who says that he is *150 years old*. How did he reach such a ripe old age? His reply is that he was always working, never smoked, never was a drinker of alcoholic beverages. He is living among the high mountains where he has a small lot, with a little orchard which keeps him busy all day. He drinks some milk (perhaps yoghurt?). He has 23 living sons and daughters, many grand and great-grand children. His eldest daughter is 120 years old, while his youngest son has just reached his centennial birth. The ambition of old man Muhammad is to reach the age of 200 years.

The same Chinese source (based upon Russian figures, evidently) mentions a still older man whose name is Muhammad Aichilev who is living in Soviet Russia. But, *in Uzbekistan*, the curious searchers found a still older woman who claims that she was born in 1803, which makes her *156 years old*. In spite of such an age, she is still carrying on her daily house chores. She has two younger brothers, one being 123 years old and the other 120 years of age, and a younger sister who is only 114 years old. Now, to top all these, the *Anhui Ribao* states that in the village of Kaulisen a woman is alive who is surely the oldest human living being on Earth. Her name is *Theresa Abushivi*, and she is (or was) *180 years old* in 1959.

At Moskva, the *Soviet Union opened a store* where various articles of the so-called *Tibetan medicine* are being sold: horns, tendons, genitals and tails of animals, the musk of the spotted stag, the bones of tigers, which are best if they are old, also the roots of numerous "miraculous" plants. Yet, the most

desired articles of Tibetan medicine, which have a tradition of several millennia and over, and which were introduced some 2400 years ago by the wise *physician Pso-Ied-Shonnu,* are the horns of young deer; this is used as a tonic, and has the supposed power of restoring muscular and mental energy; it is also good against podagra, deafness, convulsions, blood diseases, and so on. The tiger's bones are sold against rheumatism, for paralysis of the limbs, tuberculosis of the bones, malaria and arthritis. The bile of the bear is good in abdominal and liver diseases, in epidemic fevers, dysentery, infections of the eyes and nose, ulcers, and malignant abscesses. All this is offered as a panacea. For Moskva, it makes a *good trade with Asia,* even with some European countries.

Members of the *French Medical Academy* were told of a *simple test for cardio-vascular efficiency.* It is essentially the recording of the radial pulse before and after the patient's smoking of two cigarettes. Before the test, the patient should abstain from smoking for twelve hours. The correct method of testing requires that the patient should be at rest, under "basal" conditions. Then, he gets up, smokes two cigarettes (his usual brand, with or without filter) (inhaling or not). Then, a second tracing is made of his pulse, for five minutes. In normal people, this test will only result in a slight tachycardia, with some moderate vaso-dilatation. In persons who have some cardio-vascular affection the pulse will slow down as a result of the test, and a general vasoconstriction will also become evident. The constriction of the vessels may last from 15 minutes to 8 hours. The cigarette test also shows whether someone is sensitive to tobacco smoking. What is then the practical result of this test? The doctor has a definite ground to say to his patients: "You may smoke," or "You should not smoke."

The fever of *reformation* has also reached the *medical educators in Belgium.* It has been recently discussed at the Belgian Medical Society of Saint Lucas, which unites the Catholic physicians. The meeting of the Society, under the patronage of Cardinal Van Roey, was held last November at the University of Louvain. The medical curriculum includes seven years. The first three years of medical studies were for the basic sciences, and four years for the clinical sciences. There is a medical faculty at all free and State universities (Bruxelles, Louvain, Liège and Gand). The old controversy came up about the practical side and the theory of medicine; which one should predominate in the curriculum? Someone suggested that the curriculum should be reduced to five years, and that it should be supplemented by a few years in specialty studies. Another doctor suggested that the university chairs should be divided into *teaching chairs and research chairs.* The professor of surgery at the Louvain University emphasized the need for the proper selection and education of medical research workers. The Congress recognized that the modern physician should also have a *sociological education,* and he should be able to understand a person as a social being before treating him as a sick individual. In 1958, Louvain had created *regional centers* of supplementary medical education (at Bruges, Anvers, Bruxelles, Hainaut and Namur). The mission of these centers is to collaborate in the formation of the physician and of the specialist, and to help the organization of medical postgraduate courses. Someone complained that the modern physician does not have the proper moral and spiritual background which he needs for his practice. This is partly due to the universal materialistic mentality of the age, partly to the over-technicalization of the medical action.

Roma has its problem of *hospitalization. The Eternal City* now has a stable population of about two million inhabitants, with an additional fluctuation sometimes reaching a quarter of a million transients. The ratio of hospital beds is 4.8 beds per 1000 inhabitants. The ideal ratio would be 6 per 1000, or 13,500 beds, instead of the present 10,000 units. The Commissioner of Hospitals conceived a quadrennial plan for 1960-1963 which includes the construction of new hospitals as well as the enlargement of some

old ones such as the Pio Istituto, the Ospedale San Giacomo, Ospedale Sant'Eugenio, etc.

In the twentieth century, *Monte Casino* became *a double symbol.* Its abbey has been, and will remain forever, the symbol of the spirituality of mankind. Its rebuilt village is a symbol of peace, of hope which is for a better future. The village has been selected as the site for the *International Veterans Meeting* in the current month of May. Representatives of sixteen nations will meet who fought in Italy during the Second World War. They wish to express their desire for peace.

The organization of the disabled veterans is very strong all over the world, and it seems that all countries consider the affairs of their disabled veterans of primary importance. Now, for instance, the *United Arab Republic* financed the printing of what is believed to be the first edition of the *Koran in Braille.* The new edition of the Moslem Holy Book will be distributed to 23 Islam states, and to other countries throughout the world.

The chief *cause of death in Venezuela* has been *gastroenteritis.* It accounts for 16% of all deaths in this South American country. Most of those who died from it were young children between the ages of 4 months and 2 years. *Diarrheal diseases* are very frequent all over the world, and wholesale studies are made to find the epidemiology, causes, and the general trend of such diseases in every country of the world. In many lands the diarrheal diseases are not correctly diagnosed. Often no laboratory examinations are made to detect the etiological agents (Salmonella, Shigella, or else). Yet, this does not prevent the organization of control of the diarrheal diseases. *In Brazil,* for instance, the *prevention program* includes: (1) installation of "rehydration" centers, (2) home visits by nurses, (3) training of health personnel, (4) establishment of small blood-banks, (5) installation of lactaria, and (6) environmental sanitation. The *rehydration centers,* which are set up in many Brazilian communities, provide conditions for the rapid correction of disturbances in the body fluids and in the electrolytes caused by diarrhea and vomiting.

An advocate of the Supreme Court of India, Shri Purshottam Trikamdas, prepared a report for the *International Commission of Jurists* in which he stated that, on the basis of his investigations, *events in Tibet* amount to a crime of genocide. He declared that according to reliable reports an estimated 65,000 Tibetans were killed by the Chinese aggressors. It should be remembered that the 9 Dec. 1948 General Assembly of the UN created a convention (in force since Jan. 12, 1951) in which *genocide* was described as an international crime.

"Are you in despair? Do not kill yourself but call up the Outstretched Hand!" This is the slogan of a new private organization or unit (called *Dargebotene Hand* in the German) which is *operating in Switzerland* where it was established just a year ago at Zürich. The agency wishes to prevent suicides. The group includes physicians, psychologists, and priests who all work gratis day and night for this cause. The unit expanded to Bern and to Skt. Gallen, and soon it will open a post at Geneva, too, where the suicides are rather numerous according to the statistics. It seems that the "Outstretched Hand" is going to be very active. A rough calculation for the first half of 1959 showed that the organization had prevented some fifty suicides. In Skt. Gallen alone, the telephone calls amounted to some 300-500 calls every month, while in Bern and at Zürich the calls for help exceeded one thousand calls a month. A much needed social work at a stone-hearted Age! . . . *Multa paucis!*

The Sir Henry Wellcome Medal and Prize

COMPETITION FOR 1960

THE competition is open to all medical department officers, former such officers, of the Army, Navy, Air Force, Public Health Service, Veterans Administration, The National Guard and the Reserves of the United States, commissioned officers of foreign military services, and all members of the Association, except that no person shall be eligible for a second award of this medal and prize and no paper previously published will be accepted.

The award for 1960, a medal, a scroll, and a cash prize of $500, will be given for the paper selected by a committee composed of the Association's vice-presidents which reports on the most useful original investigation in the field of military medicine. The widest latitude is given this competition, so that it may be open to all components of the membership of the Association. Appropriate subjects may be found in the theory and practice of medicine, dentistry, veterinary medicine, nursing and sanitation. The material presented may be the result of laboratory work or of field experience. Certain weight will be given to the amount and quality of the original work involved, but relative value to military medicine as a whole will be the determining factor.

Each competitor must furnish six copies of his paper which must not be signed with the true name of the author, but are to be identified by a *nom de plume* or distinctive device. These must be forwarded to the Secretary of the Association of Military Surgeons of the United States, Suite 718, 1726 Eye St. N.W., Washington 6, D.C., so as to arrive at a date not later than 20 June 1960, and must be accompanied by a sealed envelope marked on the outside with the fictitious name or device assumed by the writer and enclosing his true name, title and address. The length of the essays is fixed between a maximum of 10,000 words and a minimum of 3000 words. After the winning paper has been selected the envelope accompanying the winning essay or report will be opened by the Secretary of the Association and the name of the successful contestant announced by him. The winning essay or report becomes the property of the Association, and will be published in MILITARY MEDICINE. Should the Board of Award see fit to designate any paper for "first honorable mention" the Executive Council may award the writer life membership in The Association of Military Surgeons, and his essay will then also become the property of the Association.

NOTES

Timely items of general interest are accepted for these columns. Deadline is 1st of month preceding month of issue.

Department of Defense

Ass't Secretary (Health & Medical)—HON. FRANK B. BERRY, M.D.

Deputy Ass't Sec'y—HON. EDW. CUSHING, M.D.

MILITARY STRENGTH

The total numerical strength of the Armed Forces on 29 February 1960, based on preliminary reports, was 2,488,793. This represents a decrease of 2,491 from the January 31 strength.

MEND PROGRAM

The MEND program (Medical Education for National Defense) is a program in which 55 American medical schools are now participating. The purpose of the program is to teach principles of military and disaster medicine.

Educators in medical schools regularly visit military installations for purposes of orientation and familiarization with the programs in the military services. One such visit was recently made to the School of Aviation Medicine in Texas.

This program is a voluntary one. No school is forced to belong.

MEDICARE

Over three years has elapsed since the Medicare program for dependents was inaugurated. In the three year period over $212 million has been expended. This amount when broken down for the services shows $84.3 million for the Air Force, $68.2 million for the Navy, and $55.6 million for the Army. The Public Health Service expenditures for this care amounted to $3.9 million.

The estimated expenditure for this year is $72.2 million.

REGIONAL HOSPITALS

For the maximum utilization of hopsital beds and medical personnel the establishment of regional hospitals for the Armed Services is being planned except for the metropolitan area of Washington, D.C.

The concept is not entirely new except for the fact that this will be a tri-service utilization and not a one-service matter as it was during World War II.

The ever present problem of shortage of medical personnel and of the specialties makes the establishment of hospitals of the regional type greatly desirable. The success of this plan depends also on good transportation to the regional hospital from its satellites. We can foresee some jurisdictional problems entering the picture but these should be minimized by the full cooperation of all who have the best interests of the patient in mind.

Army

Surgeon General—LT. GEN. LEONARD D. HEATON

Deputy Surg. Gen.—MAJ. GEN. THOMAS J. HARTFORD

PRESENTATION TO WRGH

Marble busts of Hippocrates and Asklepios were presented to Walter Reed General Hospital by a grateful patient, Mr. Mauricides, now of Beirut, Lebanon. The National Commander of the American Legion, Martin B. McKneally, made the presentation for Mr. Mauricides at which Counsellor A. N. Pilavachi of the Embassy of Greece was present. The gifts were accepted

for the hospital by Major General C. F. St. John, Commanding General of the Walter Reed Army Medical Center.

Mr. Mauricides underwent nine major operations and two minor surgical procedures during 1957 for a benign tissue growth of the larynx. He had served with the U. S. Army during World War I, and retired after serving with the Department of State for 35 years.

The famed Greek sculptor, Spires Ghongakis of Athens, was commissioned to duplicate the original busts on display in the National Museum in Athens.

DEPENDENT CARE

A baby was born. Its life was threatened. Imagine the concern to its parents, Sergeant First Class and Mrs. Domingo Morado of Fort Ord, California.

Through the wonderful care given to this baby, Olga Morado, by the hospital personnel, with Captain Winthrop R. Rockwell as chief of the team of surgeons that performed an almost unheard of six complete blood exchanges during the first four days of life, this baby was able to overcome its handicap of the Rh blood factor that was threatening its life.

Then the tender care given to that baby in the nursery headed by Captain Ruth Tanaka, Nurse Corps of the Army, enabled the happy parents to take Olga home.

U. S. Army Photo

CAPT. WINTHROP R. ROCKWELL, MC, USA AND CAPT. RUTH TANAKA, ANC, with baby OLGA MORADO.

While this is spectacular in itself the care given to the Armed Forces and their dependents is of the highest quality whether given by the Army, Navy, or Air Force medical personnel. Nothing is spared in the care of the patient.

EMERGENCY MEDICAL CARE CIRCULAR

A new training circular (No. 8-1) on emergency medical care, survival care, and the management of mass casualties was recently published under the direction of the Surgeon General's Office of the Army.

The circular re-emphasizes the importance of first aid, self-aid, and emergency medical care in conventional and nuclear warfare and stresses the importance of teaching non-medical personnel how to take care of themselves and their buddies until medical services become available.

WEATHER REPORTS

In 1819, Surgeon General of the Army Joseph Lovell directed that information about weather at the various military posts be kept by the medical officers. This was the beginning of the weather service, now such an important service to all of us and especially to aviation.

Surgeon Albert J. Myer (1828-1880) was appointed the first Signal Officer of the Army on June 27, 1860 and the meteorological records started by the Medical Department were continued by the new service. His appointment expired July 21, 1864.

In 1891 the work of collecting data on the weather was turned over to the weather bureau organized in the Department of Agriculture.

ARMY SOCIAL WORK CONFERENCE

The Tenth Annual Army Social Work Conference will be held at the Ambassador Hotel in Atlantic City, New Jersey, June 2-4.

During the past 18 years, a handful of social work officers has grown to number more than 100. They work in Army hospitals, dis-

ciplinary barracks, combat divisions, mental hygiene consultation services, and other specially selected units both in the continental U. S. and outside its limits.

Social work officers, along with other members of the psychiatric team, have played an important part in reducing the population in Army stockades and disciplinary barracks.

Social workers with Army Reserve Commissions may earn up to three retirement point credits by attending this conference.

RETIRED

Colonel Harriet S. Lee, former chief of the Army Medical Specialist Corps, retired from active duty after more than twenty years military service, on March 31. She plans to return to her home town of Denver, Colorado.

Since the end of her tenure as chief of the Army Medical Specialist Corps she has been on duty with the Army Medical Historical Unit and engaged in the project of the history of that corps.

Colonel Leland G. Meder, DC, recently retired from the Army after more than 30 years active service. He will practice orthodontia in association with Dr. Herbert Wehrle, Jr., Altoona, Pa.

TATTOO PARLORS

Colonel Charles C. Canada, Surgeon at Fort Rucker, Alabama, has proposed that all tattoo parlors be placed off limits because of lack of adequate sterilization equipment.

CONTRIBUTES TO MISSILE PROGRAM

"Until the U.S. is once more a leader in the space and missile race" there is one person in the country that will contribute one percent of his weekly salary to the program.

Dr. Wernher von Braun, the Army's top missile scientist, received 96 cents in postage stamps from Joseph E. Noonan of Baldwin, New York, and a letter in which Mr. Noonan made the above statement.

Mr. Noonan is to be congratulated on his interest in the welfare of his country.

ARMY MARRIAGES

A service manual, written in 1869, set forth that marriage without the consent of the commanding officer was prohibited, and if a soldier were so indiscreet as to marry anyway, his wife was deprived of the privilege of taking in washing!

Navy

Surgeon General—REAR ADM. BARTHOLOMEW W. HOGAN

Deputy Surg. Gen.—REAR ADM. EDWARD C. KENNEY

COMMANDS NAVAL MEDICAL CENTER

Rear Admiral Frank P. Kreuz, Jr., Medical Corps, U. S. Navy, has succeeded Rear Admiral Bruce E. Bradley, retired, in the command of the National Naval Medical Center, Bethesda, Maryland.

Official U. S. Navy Photo

R. ADM. FRANK P. KREUZ, MC, USN

Admiral Kreuz, a native of Michigan, received the degree of Bachelor of Science from Marquette University of Milwaukee, and then studied medicine at Northwestern University. He received his doctor of medicine degree from that University in 1930 and entered the Navy. He specialized in orthopedics and was the only Navy member and Orthopedic specialist to accompany the team of doctors on a special mission to Saudi Arabia to treat the late King Ibn Saud.

Prior to his present command he was in charge of the U. S. Naval Hospital at the National Naval Medical Center.

COMMANDS NAVAL HOSPITAL

Captain Robert B. Brown, Medical Corps, U. S. Navy, formerly the Chief of Surgery of the U. S. Naval Hospital at Bethesda, Maryland, has become the new Commanding Officer of the Hospital.

Captain Brown entered active duty with the Medical Corps of the U. S. Naval Reserve in 1942, and transferred to the Regular Navy in 1946. He has been a Surgical Consultant to the Bureau of Medicine and Surgery since 1951, and has had additional duty at the Naval Medical Research Institute, Bethesda, since 1954. He has been the Navy Member of the Surgery Study Section for the National Institutes of Health since 1951.

COMMANDS NAVAL MEDICAL SCHOOL

Captain Malcolm W. Arnold, Medical Corps, U. S. Navy, former Director of the Professional Division of the Bureau of Medicine and Surgery, recently became Commanding Officer of the U. S. Naval Medical School, National Naval Medical Center, Bethesda, Maryland.

ASSIGNED BUMED

Commander William F. Madden, MSC, has been assigned duty as Head, Aviation Operational Psychology Branch, Aviation Medicine Operations Division. He replaced Captain A. D. Grinsted, MSC, who has gone to his new assignment at the Naval School of Aviation Medicine, Pensacola, Florida.

Lieutenant Commander Franklin H. Tompkins, MSC, USN, has been assigned as Executive Secretary of the Armed Services Medical Materiel Coordination Committee. His previous assignment was at the Military Medical Supply Agency, Brooklyn, N.Y.

PROJECT HOPE

The long awaited Project HOPE (Health Opportunity for People Everywhere) has had transferred to it the Navy hospital ship *Consolation*, a 15,000-ton ship now at San Francisco.

The ship will be outfitted with new medical equipment and staffed with American doctors and nurses and sent to Southeast Asia this year. At least it is so reported.

Things are beginning to take form. Captain Paul E. Spangler, Medical Corps, U. S. Navy, Retired, of Del Rey Oaks, California, has been designated Chief of the Medical Service of the project. His staff will have 14 physicians, 2 dentists, 20 nurses, and 20 technicians who will have volunteered for four months, with succeeding four month tours on a volunteer basis.

Recently at the Fort Ord Army post the 12th Evacuation Hospital gave a demonstration for Dr. Spangler who hopes to get similar equipment for project HOPE.

Contributions for this project are solicited.

RESERVE UNITS ACTIVATED

Two Reserve medical units have been authorized for activation by the Chief of Naval Personnel.

Hospital Corps Division 12-2 will conduct drills at the U. S. Naval and Marine Corps Reserve Training Center, Fort Douglas, Utah. Membership in this unit is available to enlisted hospital corpsmen of the Naval Reserve. Those interested should communicate with Lt. John S. Darden, MC, USNR, at the above address.

Medical Specialist Unit 11-2, a non-pay unit, will conduct drills on the first and third Wednesday of each month at the U. S. Naval and Marine Corps Reserve Training Center, Phoenix, Arizona. Present membership consists of Reserve Medical and Dental Corps officers in the Phoenix area. Those interested should communicate with Commander William E. Crisp, MC, USNR, at the above address.

RETIRED

Recently retired from the Medical Corps of the Navy are: Captain Earl F. Evans who for the past three and a half years was Commanding Officer of the U. S. Naval Hospital, Charleston, S.C.; and Captain Verden E. Hockett, serving as Senior Medi-

cal Officer, U. S. Naval Station, Seattle, Washington.

Air Force

Surgeon General—MAJ. GEN. OLIVER K. NIESS

Deputy Surg. Gen.—BRIG. GEN. JOHN K. CULLEN

ASSIGNMENT

Colonel Lee Grant, USAF (MC) has been assigned as Chief of the Preventive Medicine and Occupational Medicine Branch of the Aerospace Medical Division, a division of the Directorate of Professional Services, Office of the Surgeon General.

Colonel Lewis Oden, USAF (MC) has been appointed Deputy Director of the Medical Staffing and Education Division, Office of the Surgeon General.

Major Ethel Ann Hoefly, USAF (MC) has been assigned to the Office of the Chief Nurse, Office of the Surgeon General of the Air Force. She has served as a psychiatric staff nurse, an instructor in the Department of Neuro-psychiatry at Fort Sam Houston, Texas, a Flight Nurse at Brooks Air Force Base, Texas, and an instructor in the Flight Nursing Section, School of Aviation Medicine, Texas.

GRADUATES

Thirteen senior medical officers from eleven different allied Air Forces recently graduated from the Advanced Course in Aerospace at the U. S. Air Force Aerospace Medical Center, Brooks Air Force Base, Texas. These physicians speak, write, and read the English language.

Graduates are: Maj. Gen. Hsu Chu Li, Taiwan; Colonels Thomas Girdwood, Brazil; Shigeyoshi Yamamoto, Japan; Won Chuel Kay, Korea; Lt. Colonel Vicente C. Javier, Philippines; Majors Manuel B. Ramos, Philippines; Ronald Rode, Norway; Yim Suktrakool, Thailand; Sureyya Ture, Turkey; Joao Jose Varela, Portugal; Captains Humberto Romero Ruiz, Venezuela; Feliciano Merayo, Spain; and Charu Sanguan Bhokai, Thailand.

FLIGHT NURSE GRADUATE

Forty nurses recently graduated from the U. S. Air Force School of Aviation Medicine Flight Nurse Course. Thirty-four of these are from the Regular Air Force, four from the Air Force Reserve, one from the Air National Guard, and one from the Canadian Air Force. The wings were pinned on these new flight nurses by Lt. Colonel Lucile C. Slattery, Chief of the Department of Flight Nursing.

The School of Aviation Medicine is a part of the U. S. Air Force Aerospace Medical Center and conducts 17 different courses in the field of aerospace medicine. Approximately 2200 nurses, doctors, and airmen technicians graduate from these courses annually.

ANALOG COMPUTER

A Pace Analog Computer worth $100,000 has been installed at the Air Force School of Aviation Medicine at Brooks Air Force Base, Texas. It will be used in solving complicated mathematical problems in connection with aerospace medical research.

Major General Otis O. Benson, Jr., Commander of the U. S. Air Force Aerospace Medical Center said: "This computer enables us to attack problems previously beyond our capabilities. It moves the School of Aviation Medicine well out in front in aerospace medical research."

STRESS STUDIES

Two teams of research scientists will conduct studies at the Chicago Medical School on the effect of stress in space on metabolism, endocrine glands, nervous system, and on the internal structures of the body.

These studies will aid in assessing the risk involved in working in the environments that modern high performance vehicles impose, and in estimating man's potential ability to perform assigned duties in space.

TELEVISION PROGRAM

"Health in the Air" was a special tele-

vision program recently presented over KMTV, Omaha, Nebraska, in which Brigadier General Theodore C. Bedwell, Jr., Strategic Air Command Surgeon outlined the Air Force medical program and its contributions to the mission of SAC and the space age. He was assisted by Colonel Alvin F. Meyer, Jr., and Lt. Colonel George R. Anderson.

RETIRED

Recently retired from active service are: Colonels Earl F. Harris, USAF, MC; John W. Linfesty, USAF, MC; Harris Wendell, USAF, MC; and Lt. Colonel Disheroon, USAF, DC.

Public Health Service

Surgeon General—LEROY E. BURNEY, M.D.
Deputy Surg. Gen.—JOHN D. PORTERFIELD, M.D.

APPOINTMENT

Dr. Charles R. Mallary has been appointed as Deputy Chief of the Bureau of Medical Services, Public Health Service. He succeeds Dr. Arnold B. Kurlander, recently assigned to the Surgeon General's office as Assistant Surgeon General.

The Bureau of Medical Services' programs include the Indian health program, the hospitals and clinics of the Service, Foreign Quarantine, the Hospital and Medical Facilities Construction Program, activities concerned with development of the Nation's dental and nursing resources, and medical services of the U. S. Coast Guard and Bureau of Prisons.

POLIOMYELITIS MEETING

A joint American-Soviet meeting on poliomyelitis will be held in the Soviet Union in May. This is in accordance with the U.S.-U.S.S.R. Exchange Agreement of November 21, 1959, which in addition to poliomyelitis covers joint meetings to follow on cancer and heart disease, and other medical subjects.

Chairman of the delegation is Dr. David E. Price, Assistant Surgeon General of the Public Health Service; Dr. Roderick Murray, National Institutes of Health; Dr. Alexander Langmuir, Atlanta Communicable Disease Center; and Dr. Albert Sabin, Cincinnati.

The following topics are to be discussed in connection with poliomyelitis:

1. Evaluation of the results obtained in mass immunization of the population with live poliomyelitis vaccine from the Sabin strain.
2. Report on American activities with reference to live poliovirus vaccine.
3. Evaluation of quality control methods for live poliovirus vaccine.
4. A program for joint Soviet-American studies on poliomyelitis.

NEW HOSPITAL

The Hopi Indians will have a new hospital at Keams Canyon, Arizona. This 38-bed hospital to cost $819,220 was recently authorized by the Public Health Service which now has charge of the medical care of the Indians and Eskimos. Construction of this new hospital which will replace an old one is expected to be completed sometime in 1961.

DENTAL CARE STATISTICS

Dental Care—interval and frequency of visits—U.S. July 1957-June 1959 (PHS Publ. No. 584-B14) is a 42-page booklet that is available for 35¢ a copy from the Superintendent of Documents, Government Printing Office, Washington, D.C.

When asked "How long has it been since you went to a dentist?" 23 percent of the population responded with time periods of less than 6 months and 14 percent from 6 to 11 months. Approximately 43 percent of the population reported time periods of one year or more, with an additional 18 percent indicating that they had never been to a dentist.

This is an interesting booklet for those interested in dental care statistics.

INDEX MEDICUS

The first volume of the new *Index Medicus* published by the National Library of

Medicine in now in circulation. This new publication supersedes the *Current List of Medical Literature* by that library and the *Quarterly Cumulative Index Medicus* by the American Medical Association.

Subscription rate for *Index Medicus* is $20 a year in the United States and $25 outside U.S. Subscriptions should be sent to the Superintendent of Documents, Government Printing Office, Washington, D.C.

PAMPHLET

"Mongolism—Hope through Research" is a brochure recently published by the Public Health Service and tells the efforts that are being made at the National Institutes of Health to find the cause and prevention of this disorder.

Single copies of this brochure may be obtained free by writing to the National Institute of Neurological Diseases and Blindness, Bethesda 14, Maryland. Quantity orders at $3.00 per 100 may be placed with the Superintendent of Documents, Government Printing Office, Washington 25, D.C.

Veterans Administration

Chief Medical Director—WILLIAM S. MIDDLETON, M.D.

Deputy Chief Med. Dir.—R. A. WOLFORD, M.D.

VETERAN POPULATION

The following figures are given for veterans in civil life:

	Feb. 1960	*Feb. 1959*
Total	22,574,000	22,709,000
WWI	2,704,000	2,812,000
WWII	15,214,000	15,257,000

Other wars and the Regular establishment account for the remainder.

PATIENT LOAD

The average daily patient load for veteran patients in hospitals was 117,253 in February 1960. This was an increase from the 116,991 in February 1959. There were 3,150 beds occupied by veterans in non-VA hospitals (February 1960).

During the month of February 1960 there were 184,453 outpatient visits for medical care, an increase of approximately 3,000 over the same month last year.

DEADLINE ON GI HOME LOANS

July 25, 1960 is the cut-off date for World War II veterans to apply for a GI home loan. An additional year will be allowed in which to have the loan processed and closed.

January 1965 is the deadline for veterans of Korean Conflict to negotiate a GI home loan.

FAMILY ACQUAINTANCE DAY

One way of getting the public better informed about mental conditions has been found at the Lexington, Kentucky, Veterans Administration Hospital. A day is set aside and known as "Family Acquaintance Day."

Invitations are sent out by the patients themselves to their families inviting them to visit the hospital on the day set aside. The families are met by members of the staff of the hospital and short welcoming talks are given. These talks include the doctors, nurses, and chaplain. Then the families visit the various sections of the hospital and are free to contact patients. Usually some social event is planned.

This orientation has been found to be extremely valuable and is familiarizing the families with some of the problems.

Possibly this is the beginning of the breakdown of the barrier between the general public and the mentally ill. As one relative commented, "I didn't realize so many other people experienced mental illness in their family. I had just thought of ourselves."

Miscellaneous

HYPNOSIS FOUNDATION

Seminars on Hypnosis Foundation is the name under which a non-profit teaching and research institute has been chartered in Illinois. The purpose is to further the scientific development of hypnosis.

Milton H. Erickson, M.D., Phoenix, Arizona, psychiatrist and chairman of the board of governors said, "We hope to recruit a larger and larger body of competent lecturers in various parts of the country and thus put an end to the sporadic, ill-advised, unsystematized teaching by charlatans, stage hypnotists and others who do not have adequate teaching background and seek merely to gain selfish advantage by exploitation of the need for teaching in hypnosis."

The office of the Foundation is at 6770 N. Lincoln Ave., Chicago, Ill.

POSTDOCTORAL FELLOWSHIPS

Research Fellowships for those M.D.'s, or Ph.D.'s preparing for careers in scientific research or academic medicine. One or two year fellowships, occasionally longer, are offered at stipends $4,500 to $6,420 with allowances for dependents.

Clinical Fellowships in arthritis and related diseases, orthopedics, preventive medicine, and rehabilitation are offered.

Research and Teaching Fellowships in the fields of orthopedics, pediatrics and neurology.

For information about these fellowships write to The National Foundation, 800 Second Avenue, New York 17, N.Y.

TEMPERATURE READINGS MADE EASY

Temperatures of patients can be obtained by the nurse without moving from her chair in her office through a device invented by Dr. D. C. Simpson of Edinburgh University.

The new clinical thermometer is electronic, working on transistors and a small battery. It consists of a meter, a switch and highly sensitive thermistors, or "probes." The probe has a metallic oxide tip. The electrical resistance of this tip changes when heat is applied to it. It can be strapped to the patient and connected by wires to the central temperature reading point. There the resistance of the thermistor is measured and the temperature indicated on a dial which is in the nurse's office. The number of probes that can be connected to the meter is unlimited.

ELECTRON MICROSCOPE

An electron microscope that will magnify pieces of cartilage 150,000 times is being installed at St. Thomas's Hospital Medical School, London. This is said to be the first of its kind in the world.

The microscope will be used in studying arthritis and will be available for research workers in Britain.

RADIOACTIVITY MEASURING DEVICE

A compact unit, the Magnascaler, is an easy-to-operate radioactivity measuring device that has just reached the market.

This device can collect more than 600,000 counts per minute with an accuracy of over 99 per cent.

PG COURSES IN DENTISTRY

The School of Dentistry of The University of North Carolina is offering postgraduates courses in dentistry on the following dates: June 7-11 (Clinical Periodontia and Oral Pathology), July 11-15, July 18-22, July 25-29 (Dentistry for Children).

Further information may be obtained by writing to the Director, Office of Postgraduate Dental Instruction, School of Dentistry, Box 750, Chapel, N.C.

PROSTHETICS COURSES

Two-week courses are being offered in prosthetics by the New York University Post-Graduate Medical School, 342 East 26 St., New York 10, N.Y. Courses will be offered from August 15 through 26.

#741-1 is for physicians; #742-1 is for physical and occupational therapists; #743-1 is for prosthetists.

Address applications to Dr. Sidney Fishman, Director, at the above address.

CONTACT LENSES

Motor vehicle operators who use contact lenses should check with their State to ascertain if it is necessary to have an additional entry on permits requiring the wearing of glasses.

LABEL WARNINGS

"A drug or device shall be deemed to be misbranded unless its labeling bears . . . such adequate warnings against use in those pathological conditions or by children where its use may be dangerous to health, or against unsafe dosage or methods or duration of administration or application, in such manner and form, as are necessary for the protection of users." Sec. 502 (f) (2), Federal Food, Drug, and Cosmetic Act.

A trade advisory service has been established by the Food and Drug Administration to assist drug firms in the proper wording on labels where a warning to the user should be given.

However, it has been pointed out that the user should read the label and follow the instructions carefully.

MEETING

The annual meeting of the American Association of Blood Banks will be held in San Francisco, August 21-26. Further information may be obtained by writing to the headquarters, Suite 1619, 30 North Michigan Ave., Chicago 2, Ill.

The Third International Congress of Physical Medicine will meet in Washington, D.C. August 21-26. Dr. Frank H. Krusen, senior consultant and former head of physical medicine and rehabilitation at the Mayo Clinic, Rochester, Minnesota, is the Congress president.

The Secretary-General, International Congress of Physical Medicine is Walter J. Zeiter, M.D., 301 N. Michigan Avenue, Chicago 2, Ill.

DRUG INDEX

The *American Drug Index* lists drugs alphabetically and cross indexes them.

A valuable feature of the book is the grouping of drugs in various ways. For instance, all antihistamines are grouped under that title. Then any one of them is found under its trade name or chemical name.

Preparations of amphetamines are listed in a four-page table in which the other drugs used in combination are given with the manufacturer and the brand name. The aluminum hydroxide gel combinations also require four pages for listing.

Because of the extensive cross indexing the information desired can be readily found.

"The *American Drug Index* should be most useful to physicians, pharmacists, dentists, nurses, and to sales personnel, students and teachers in the fields incorporating pharmaceuticals."

This 712-page book is published by J. B. Lippincott Company of Philadelphia. Price $5.75.

NEW AND NONOFFICIAL DRUGS—1960

This annual publication of the Council on Drugs of the American Medical Association is now available from the J. B. Lippincott Company of Philadelphia at $3.35 per copy.

The 1960 book of 768 pages follows the usual format of previous years. Forty-five monographs have been added on drugs, and 21 have been omitted, the reasons for which have been stated.

A valuable section, *Appendix of Manufacturers*, has been added in which the address of each with their drugs listed in the book are shown. Of course, there is the index listing each drug.

LIST OF MANAGEMENT BOOKS

A list of 100 approved books on Management—the Colonel Urwick edition of the *University Dean's Five Foot Shelf of Management Books*—is free to Comptrollers, Chiefs of Management Divisions, Training Officers and Librarians.

The "Shelf" is a non-profit enterprise, conducted to aid management competence in Government. Address the "Shelf" for list—41 Paon Blvd., Wakefield, Mass.

FREE BOOK

Xylocaine—The Pharmacological Basis of its Clinical Use—is a 146-page book with an extensive bibliography and index which may be obtained free from Astra Pharmaceutical Products, Inc., 7 Neponset St., Worcester 6, Mass. The author is Sten Wiedling of

Sweden. The book, of course, is in English. It will be found to be interesting and valuable to those using anesthetics because of its chapters on the effects of this anesthetic on blood pressure, blood, central nervous system, etc.

SYMPOSIUM—EFFECTS OF ESTROGENS

"The Effect of Estrogens in The Menopause Including The Metabolism of Estrogens" was the result of a transatlantic telephone symposium between New York and Amsterdam. Three American and three European physicians participated with one physician, Dr. I. A. Wijsenbeek of Amsterdam acting as the moderator.

Copies of this symposium are available by writing to: Medical Director, Ayerst Laboratories, 22 East 40th St., New York 16, New York.

FILM AVAILABLE

"Rehabilitation Adds Life to Years" is a 30-minute color sound film available through the Film Library of the American Medical Association, 535 North Dearborn Street, Chicago 10, Ill.

With the emphasis now on rehabilitation this would be an excellent film to put on the program at medical meetings.

REPORTS AVAILABLE

The Semiannual Report to the Atomic Energy Commission on biology and medicine (ACRH-12), 82 pp., price $2.00.

Acute Radiation Sickness and its Delayed Consequences (AEC-tr-3924), 35 pp., price $1.25.

Origin of Life on Earth and Elsewhere (UCRL-9005), 45 pp., price $1.25.

Above may be ordered from the Office of Technical Services, Business and Defense Services Administration, U.S. Department of Commerce, Washington 25, D.C.

THE DRUG INDUSTRY'S "TRIAL"

Senator Alexander Wiley (R., Wis.) of the Senate judiciary Committee in an address before the Iowa Pharmaceutical Association's Annual Convention at Cedar Rapids, Iowa, on March 8 said:

"The public attention was constantly directed to profits on a single product of a single company—without relating these to the many thousands of products produced by the entire industry, or the overall costs of doing business;

"Hardly any reference was made to the high risks of this industry, which in 1958 had to test 114,600 substances before it could produce *40* marketable drugs;

"Little reference was made to the high degree of obsolescence in the drug industry—where one product can have 99% of the market one year, and only 3% two years later;

"No mention was made of the fact that while wages increased 70% between 1948 and 1958, and construction costs 64%—the increase in the wholesale drug prices was 3% only;

"No mention was made of the fact that the Soviet Union, in which the profit motive does not exist, produced no single new drug since the Communist Revolution;

"And this being a monopoly investigation, it is surprising that nobody bothered to emphasize that more than 1300 companies are engaged in the manufacturing of prescription drugs—with no one company accounting for as much as 10% of the total sales."

HEALTH

The average American family spent $294 for all personal services (doctors, hospitals, drugs, etc.) in 1957-1958. But these costs were distributed unevenly. About 3% of all families had no health costs; 31% spent $1 to $99; 34% spent $100-299; and the remaining 32% spent $300 or more.

Health Information Foundation.

DRUGS AND DINNER

"Everyone knows that many of the new drugs are not cheap. These days you can expect to pay as much to cure a girl of pneumonia as to take her to dinner and the theater."

Chicago Tribune.

HEALTH AND LIPSTICK

Pure Food and Drug officials still insist . . . that certain coal tar colors in lipstick . . . are definitely harmful in tests on laboratory animals.

The effect on humans is not established. The unqualified conclusion is that people who wear lipstick should never kiss rats.

Paul Harvey News.

MEDICINE

When asked by a young intern which medicine he considered the greatest boon, the old doctor looked back thoughtfully over a half century of practice. . . . As memories crowded in upon him, they brought a sharp clear recognition of the one medicine which he believed to be the master medicine of all. To the intern he said: "The most wonderful medicine is not compounded of rare expensive drugs; it is one of the most commonplace things I know. In fact, it is not a drug at all. You can spell the name of this master medicine with four simple letters, W-O-R-K."

Megiddo Message.

TRAFFIC SAFETY

"Blood pressure would be less if more pressure were put on the brakes and less on the horn" (M/Sgt. Will McCormick).

"More patient pedestrians mean less pedestrian patients" (M/Sgt. Ed Ross). Both sergeants are from Fort Benjamin Harrison, Indiana, and they are interested, as many of us are, in reducing the number of traffic accidents.

It is predicted that in 1976 there will be 114 million cars, an increase of approximately 63% over the 70 million in the United States in 1959.

We had better be concerned about better driving habits. That baby of 1960 will in many states be learning to drive. While we are going all out now to protect its life are we going to jeopardize that life in 1976?

The solution as we see it is to develop more courtesy in our driving, more stringent laws for violators and the enforcement of those laws, and less emphasis on power and speed of the automobile. We do not need jet powered automobiles. Let's leave the high speed for the airplane.

OR, maybe we should follow Will Rogers advice given many years ago: "Let the highways be open only to cars that are paid for."

New Members

Captain Earland E. Hedblom, MC, USN
Major Sarah W. Bunn, ANC
Capt. Gerald L. Parke, DC, USN
Lt. Lawrence Scharff, DC, USNR
1/Lt. Henry O. Wick, Jr., MSC, USAF-R
Lt. Col. S. O. Smelsey, USAF, MC
Dr. Paul Q. Peterson
Lt. Joseph L. Willoughby, MC, USNR
Capt. Ernest Harold Holland, MC, USAR
Dr. Sheldon F. Deutsch
Col. Leo E. Benade, MSC, USA
Lt. Herman Shapiro, DC, USNR
Lt. Paul H. Neiberding, MC, USN
Capt. Paul L. Weinmann, MC, NGArUS
Lt. Donald E. Willard, Jr., MC, USN
Capt. M. Wishengrad, MC, USN
Lt. Nicholas G. Skaperdas, DC, USNR
Harvey L. Moss, M.D.
Capt. Robert A. Stalter, (MC) USN
Major Philip Murillo Prieto, USAF-R
Major Moses L. Gottlieb, AUS
Dr. Robert A. Hingson
Col. James A. Rooney, MSC, USAR
Dr. Saul Boyarsky
Col. Spencer A. O'Brian, MC, USAF

Honor Roll

Since the publication of our last list, the following sponsored one or more applicants for membership in the Association:

Col. W. F. Shutt, USAF, MSC
Lt. Col. Joseph Hirsh, MC, USAR
Col. W. B. Draper, MC, USA
Col. George B. Green, USAF, MC
John B. Nettles, M.D.
Maj. William R. Bunge, MC, USA

Sr. Surg. E. S. Rabeau, USPHS
Capt. Frank A. Giglio, MC, USAF
Capt. Anna Marie Rider, USAF, Res.
Lt. Col. Hugh W. Randel, USAF, MC
Lt. W. D. Latham, MC, USN

Deaths

CLOSE, Nellie, Lt. Colonel, Army Nurse Corps, Retired, died on March 19 at Valley Forge General Hospital, Phoenixville, Pa., after a lingering illness. Her age was 74.

Colonel Close, a native of Gilberton, Pa., took her training at St. Joseph's Hospital in Philadelphia, graduating in 1910. In 1912 she was appointed to the Army Nurse Corps and served for two years. She returned to the Army in 1915, served in France during World War I, and later served in the Philippines and Hawaii, in addition to the many assignments in the United States. During World War II she was in the Office of the Surgeon General of the Army until 1944 when she was retired for physical disability.

She is survived by her sister, Anne Close of Mahanoy City, Pa. Interment was in the Arlington National Cemetery.

HALL, John R., (Senior), Colonel, Medical Corps, U. S. Army, Retired, died February 12, at St. Petersburg, Florida, of a heart attack. His age was 76.

Colonel Hall was a native of Missouri and a graduate of the Washington University School of Medicine, St. Louis (1908). He entered on active duty as a Reserve Officer in the Medical Corps of the Army in 1914, and was later commissioned in the Regular Army from which he was retired in January 1948. Among his assignments were tours of duty in the Canal Zone and at the Cavalry School, Fort Riley, Kansas. Twice he held the position as Professor of Military Science and Tactics at the Washington University School of Medicine. From 1939 to 1943 he was on duty in the Office of the Surgeon General of the Army. He was honored with the Legion of Merit. The records of the Association of Military Surgeons show that he was co-author of an article, "Joint Training of Army and Navy Medical Reserve" published in *The Military Surgeon* (now MILITARY MEDICINE), volume 73:29, July 1933.

He is survived by his widow, of Ashland, Mo., and a son, Colonel John R. Hall, Jr., who is Surgeon of the Fifth U. S. Army Corps, A.P.O. 79, New York.

KIRSCHBAUM, Harry M., Lt. Colonel, Medical Corps, U. S. Army, Reserve, died December 2, 1959 at Detroit, Michigan. His age was 59.

Doctor Kirschbaum received his medical degree from the Wayne State University College of Medicine at Detroit in 1921. He was a veteran of World Wars I and II, serving during World War II with the Medical Service of the U. S. Army Air Corps. After that War he returned to his practice in Detroit with his specialty being obstetrics and gynecology. He was certified by the American Board of Obstetrics and Gynecology, and was a Fellow of the International College of Surgeons and the American College of Surgeons. He had maintained his residence at 19255 Canterbury Road, Detroit 21, Mich.

RAGINS, Alex B., Colonel, Medical Corps, U. S. Army Reserve, died February 14, in Chicago, Illinois. His age was 52.

Doctor Ragins received his medical degree from the University of Illinois College of Medicine in Chicago in 1932. His specialty was pathology. Residence was maintained at 1825 W. Harrison St., Chicago 12, Ill.

STRAIN, Ruth G., Lt. Colonel, AMSC, dietitian at Letterman General Hospital, San Francisco, died February 17. Her age was 49.

Colonel Strain, a native of Chicago, had over fifteen years of Army service, having joined the service in 1944. She served in Europe during World War II, and later assignments took her to the U.S. Military Academy at West Point, to Fort Bragg, N.C., and to the 34th General Hospital in France.

She is survived by her father and a brother. Interment was at Arlington National Cemetery.

NEW YORK CHAPTER MEETING
May 19, 1960

The Annual Spring Meeting of the New York Chapter of the Association of Military Surgeons of the United States will be held at:

Albert Einstein College of Medicine
Bronx Municipal Center
Eastchester Road and Morris Park Avenue
Bronx 6, New York

Thursday, May 19, 1960

SCIENTIFIC PROGRAM—4:30 P.M.
(College of Medicine and Jacobi Hospital)

Department of Anesthesiology
"Basic Principles of Medical Instrumentation"
"Principles and Technics of Pulmonary Resuscitation"
A sixty-foot exhibit on Resuscitation

Division of Clinical Laboratories
Demonstration of automation equipment for processing large numbers of specimens

Department of Surgery
"Extra-corporeal Circulation with Hypothermic Cardiac Arrest" by Robert Goetz, M.D.

Departments of Radiology, Anesthesiology, and Medicine
"Total Body Irradiation: Acute Radiation Syndrome; Effects in Anesthesia; Effects on Autologous Skin Grafts; Effects on Cholesterol Metabolism"

Department of Rehabilitation Medicine
"Rehabilitation After Catastrophic Injuries"

COCKTAILS—DINNER

Following the scientific program there will be cocktails and dinner which will be open to all (by subscription). There will be a guest speaker of prominence.

It is expected that with this "hosting" of the Annual Spring Meeting by the Einstein College of Medicine, a new tradition will be established and each year another Medical School in the New York Metropolitan area will provide facilities and personnel for the presentation of a program of military medical significance. In this manner, the latest developments in laboratory and clinical medicine which bear closely upon their application to civil defense and military medicine can be brought not only to the membership but to the medical community at large.

Members and non-members are urged to attend this important meeting. There is no registration fee but for purposes of planning those expecting to attend please contact Lt. Colonel Joseph Hirsh, Associate Professor of Preventive Medicine at the above address.

Committee:
Col. G. D. Dorman, MC, USAR
Lt. Col. Joseph Hirsh, MSC, USAR
Lt. Cdr. Herbert Volk, MC, USNR

NEW BOOKS

Books may be ordered through this association.

An Atlas of Neurosurgical Techniques, James L. Poppen, M.D., W. B. Saunders Co., Philadelphia, Pa. Price $28.00

Cosmetic Surgery, Principles and Practice, Samuel Fomon, M.D., J. B. Lippincott Co., Philadelphia, Pa. Price $27.50.

X-Ray Technology, Charles A. Jacobi, B.Sc., R.T. (A.R.X.T.), M.T. (A.S.C.P.) and Donald E. Hagen, R.T. (A.R.X.T.), C. V. Mosby Co., St. Louis, Mo. Price $10.00.

Principles of Public Health Administration, John J. Hanlon, M.S., M.D., M.P.H., C. V. Mosby Co., St. Louis, Mo. Price $10.50.

Newer Virus Diseases, John M. Adams, M.D., Ph.D., The Macmillan Company, New York, N.Y. Price $5.75.

Typical Gynecologic Operations, Siegfried Tapfer, M.D., J. B. Lippincott Co., Philadelphia, Pa. Price $9.00.

Ciba Foundation Study Group No. 3, Cancer of the Cervix, Diagnosis of Early Forms, Editors G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Maeve O'Connor, B.A., Little, Brown & Co., Boston, Mass. Price $2.50.

Cardiac Auscultation, J. Scott Butterworth, M.D., Maurice R. Chassin, M.D., Robert McGrath, M.D., Edmund H. Reppert, M.D., Grune & Stratton, New York, N.Y. Price $6.25.

The Health of People Who Work, Edited by Albert Q. Maisel, The National Health Council, New York, N.Y. Price $4.50.

Handbook of Neurological Diagnostic Methods, Edited by Fletcher McDowell, M.D., Harold G. Wolff, M.D., Williams & Wilkins Company, Baltimore, Md. Price $4.50.

Whillis's Elementary Anatomy and Physiology, Roger Warwick, B.Sc., Ph.D., M.D., Little, Brown & Co., Boston, Mass. Price $6.00.

Zabriskie's Obstetrics for Nurses, Elise Fitzpatrick, R.N., M.A., Nicholson J. Eastman, M.D., J. B. Lippincott Co., Philadelphia, Pa. Price $6.00

Surgical Philosophy in Mass Casualty Management With Detailed Notes on Practical Care, Warner F. Bowers, A.B., B.Sc., M.D., M.S., Ph.D., and Carl W. Hughes, A.B., M.D., Charles C Thomas Publisher, Springfield, Ill. Price $6.75.

Recent Advances in Surgery, edited by Selwyn Taylor, D.M., M.Ch., F.R.C.S., Little, Brown and Company, Boston, Mass. Price $13.00.

Surgery in World War II, Neurosurgery, Volume II, Office of the Surgeon General, Dept. of the Army, Editor in Chief, Col. John Boyd Coates, Jr., M.C., Superintendent of Documents, Washington 25, D.C. Price $7.00.

Fundamentals of Modern Allergy, Edited by Samuel J. Prigal, M.D., F.A.C.P., Blakiston Division, McGraw-Hill Book Co., Inc. New York, N.Y. Price $18.50.

Current Approaches to Psychoanalysis, Edited by Paul H. Hoch, M.D., and Joseph Zubin, Ph.D., Grune & Stratton, New York, N.Y. Price $6.50.

Principles of Orthopaedic Surgery, Paul C. Colonna, M.D., Little, Brown & Co., Boston, Mass. Price $22.00.

Anatomy, Ernest Gardner, M.D., Donald J. Gray, Ph.D., Ronan O'Rahilly, M.S., M.D., W. B. Saunders Co., Philadelphia, Pa. Price $15.00.

Significant Trends in Medical Research, Ciba Foundation 10th Anniversary Symposium, Editors, G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., Cecilia M. O'Connor, B.Sc., Maeve O'Connor, B.A., Little, Brown & Co., Boston, Mass. Price $9.50.

The Lifespan of Animals, Ciba Foundation Colloquia on Ageing, Editors, G. E. W. Wolstenholme, B.E., M.A., M.B., B.Ch., and Maeve O'Connor, B.A., Little, Brown & Co., Boston, Mass. Price $9.50.

Biochemistry of Human Genetics, Ciba Foundation Symposium, Editors, G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., and Cecilia M. O'Connor, B.Sc., Little Brown & Co., Boston, Mass. Price $9.50.

Actualities Neurophysiologiques, A. M. Monnier, Masson & Cie, Editeurs, Paris, France. Price $42 NF.

Le Cortex Cerebral, J. De Ajuriaguerra and H. Hecaen, Masson & Cie, Editeurs, Paris, France. Price $46,00 NF.

Exploration du Cereau Humain par Electrodes Profondes, Michel Ribstein, Masson & Cie, Editeurs, Paris, France. Price $30,00 NF.

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